

Archaeological Institute of America

AMERICAN  
JOURNAL OF ARCHAEOLOGY

Second Series

THE JOURNAL OF THE ARCHAEOLOGICAL  
INSTITUTE OF AMERICA

VOLUME XX

1916



CONCORD, N. H.

PUBLISHED FOR THE INSTITUTE BY

**The Rumford Press**

NEW YORK: THE MACMILLAN COMPANY

LONDON: MACMILLAN & CO., LTD.

BOSTON UNIVERSITY  
COLLEGE OF LIBERAL ARTS  
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May, 1937  
Bound May, 1937

# American Journal of Archaeology

SECOND SERIES

THE JOURNAL OF THE ARCHAEOLOGICAL INSTITUTE OF AMERICA

Vol. XX, 1916

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Volume XX

1916

No. 1

# AMERICAN JOURNAL OF ARCHAEOLOGY

*Second Series*

THE JOURNAL OF THE ARCHAEOLOGICAL  
INSTITUTE OF AMERICA

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BYZANTINE MUSICAL NOTATION  
GENERAL MEETING OF THE INSTITUTE  
SPECIAL MEETING OF THE INSTITUTE  
ARCHAEOLOGICAL NEWS (July-December, 1915)

CONCORD, N. H.

PUBLISHED FOR THE INSTITUTE BY

**The Rumford Press**

NEW YORK: THE MACMILLAN COMPANY

64-66, FIFTH AVENUE

LONDON: MACMILLAN & CO., LTD.

Annual Subscription, \$5.00

Single Numbers, \$1.50

PUBLISHED QUARTERLY

BOSTON UNIVERSITY  
COLLEGE OF LIBERAL ARTS  
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PLATE

I. Eye Beads.

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# Art and Archaeology

At the Washington Meeting, December 31, 1912, the Council of the Archaeological Institute authorized the officers to transform the BULLETIN into a non-technical illustrated monthly magazine as rapidly as was consistent with financial stability and the maintenance of high editorial and artistic standards. The name adopted by the Council at Montreal, January 3, 1914, is ART AND ARCHAEOLOGY.

The first (JULY) number appeared in June and the succeeding numbers followed every other month during 1914. Owing to the uncertain financial conditions incident to the European War, the Council at the Annual Meeting in Philadelphia, December 29, 1914, voted that ART AND ARCHAEOLOGY continue to be published every other month until the Executive Committee should otherwise authorize. As soon as circumstances justify, the Executive Committee will be asked to authorize its appearance as a monthly magazine, in accordance with the original resolution of the Council.

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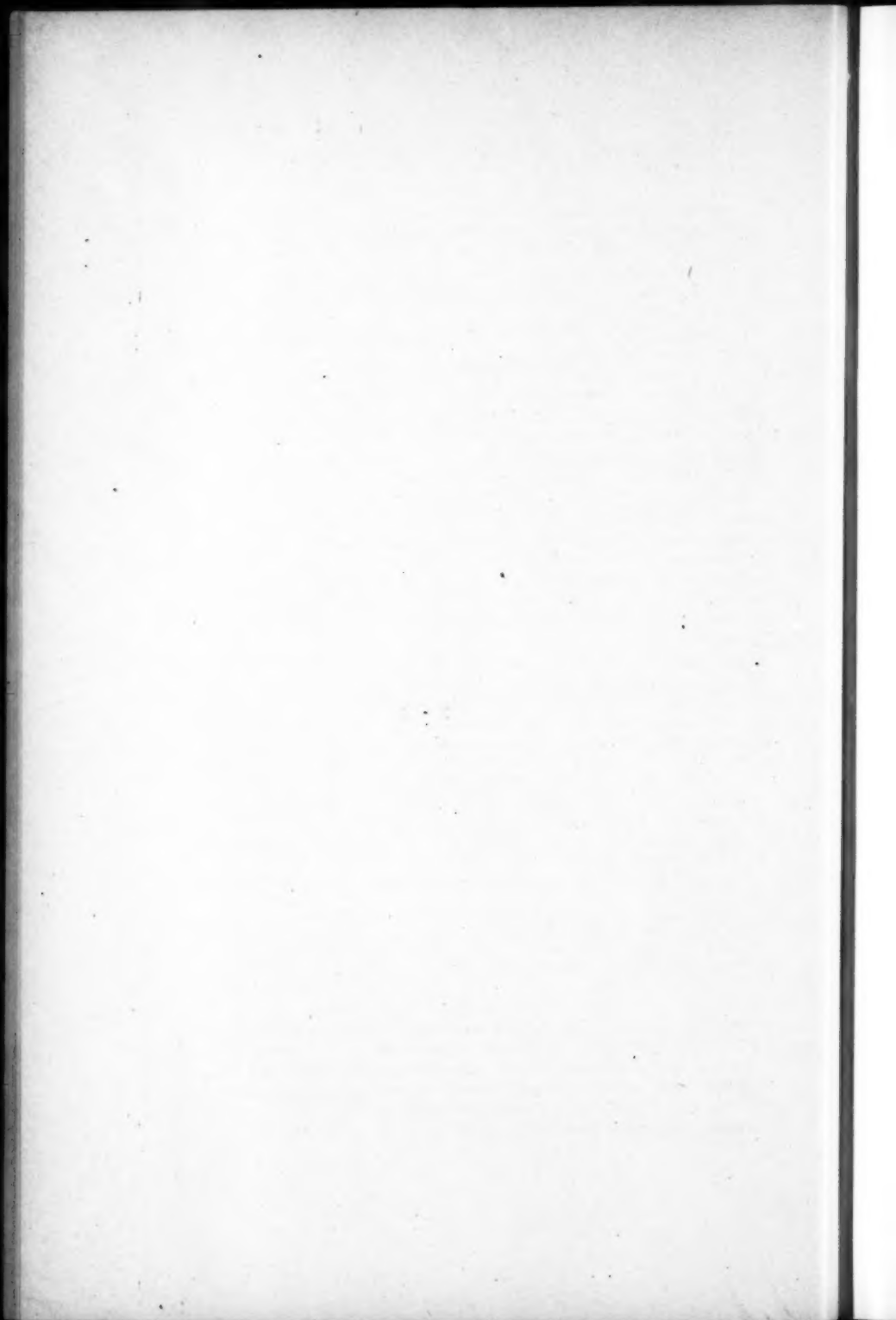
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Contributions and editorial correspondence should be addressed to ART AND ARCHAEOLOGY, The Octagon, Washington, D. C.

Subscriptions and advertisements will be received by The Waverly Press, Baltimore, Md.; and by the General Secretary of the Archaeological Institute, The Octagon, 1741, New York Avenue, Washington, D. C.

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EYE BEADS

THE CHARACTERISTICS OF EYE BEADS FROM THE  
EARLIEST TIMES TO THE PRESENT

[PLATE I]

THE following review of the eye beads is the result of studies made during the last five years in many museums in Italy, Switzerland and Germany, as well as in the Metropolitan Museum of New York, where the collections from the Palace of Amenhotep at Thebes and those from Lisht and other, unnamed, places were generously placed at my disposal by the excavators, Messrs. A. M. Lythgoe and H. E. Winlock, both of whom are much interested in this matter and have pointed out to me many interesting points which otherwise might have escaped my attention. The results of these excavations cannot be valued too highly, as they enable us with some degree of certainty to segregate the beads of two distinct periods which hitherto have not been separated—those of the XVIII and XIX Dynasties.

As an aid in dating excavated material beads occupy a very important place, partly because their structure and technique is different in different periods, partly because their ornamentation in no small degree corresponds with that of other objects of the same period. Hitherto the study of beads has been much neglected and has generally been considered less important than that of other objects. The main difficulty in studying beads lies in the neglect with which they have been treated by investigators who rarely have figured and described them properly. Description alone cannot make a lasting impression on the mind of the investigator. While figures in black and white might serve the purpose in some cases, those in colors alone can give us a true understanding of their appearance and nature.

A proper study of beads not only makes us acquainted with the artistic taste of those who made and wore them, but it also will help to clear many obscure points in the relationship of different nations, their trade, migrations and religious beliefs. Many investigators consider that primarily all beads were used as tal-

ismans and amulets and that their value as ornaments was of secondary importance. The most remarkable proof of such opinions is the fact that, to this day, the peasants of Brittany possess numerous (until lately innumerable) necklaces of antique beads preserved as heirlooms from remote centuries, which now pass from hand to hand in the curing of various diseases.<sup>1</sup> Among these antique beads, those with the mysterious eye-spots are counted of special virtue, and it is stated that 1,000 francs could not induce the owner to part with a certain bead.

A study of beads reveals the interesting fact that many types once common and popular soon fell into disuse, but were introduced again centuries later, when they were, however, manufactured by a different technique which permits us to distinguish readily the older from the later examples. The technique of the beads is thus the most important point in their study.

*Definition.*—A bead is a unit of a necklace and perforated by one or several bores. A glass bead is such a unit made of glassy material, transparent or opaque, but always more or less uniform, a material that has been formed in a state of fusion. The word paste which many use to designate opaque glass, had better, I think, be employed for a material formed cold, like potter's clay. An eye bead is one ornamented with one or more spots resembling eyes, which, however, may be circular, oval, triangular or square.

*Description.*—The body of which a bead is made may be called the matrix and the color of the matrix the base color. In describing the matrix, mention if the glass is clear or full of blow-holes, the latter being characteristic of the earliest glass beads, though such glass lasted a long time in conjunction with a more perfect kind. It should also be noted if the glass is unusually streaky; such glass abounds during the third and fourth centuries A.D., and is now met with especially in Arabic beads. In describing the colors, a color chart is of great advantage, those supplied by Messrs. Winsor and Newton answering the purpose. To state simply that the beads are "blue, green, yellow and red" conveys no information of value. Different tints are characteristic of different periods, and the color of a bead will often determine at once its age. Certain blues and greens are found

<sup>1</sup> Aveneau de la Grancière, *Les parures préhistoriques et antiques en grains d'enfilage et les colliers talismanes Cello-Armoricains*. Paris, 1897. Ernest Leroux.

only in the New Empire, others in the Late Empire. An intense ultramarine is characteristic of the beads of Rameses IV, as a certain pale blue was a favorite under Thothmes III. A certain deep ultramarine is found only in beads of the eighth and seventh centuries B.C. Yellows are equally characteristic of certain epochs, for instance, the pale greenish lemon and the deep orange of the latter part of the Roman Empire, but especially of the Lombard beads. The fine "rose dorée" appears only during the Ptolemaic-Roman time, while the intensely bright emerald green can be called characteristic of the beads of the sixth century A.D.

Equal importance attaches to the different types of ornamentation. The straight bands appear on glass beads during the XIX to XX Dynasties. The "Wave" band around the girdle of the bead does not appear before the eighth or seventh century B.C., and becomes common in the fifth century B.C. The links, consisting of two wide waves which cross, appear first in the fourth and third centuries B.C., but disappear to return during the latter part of the Roman Empire.

The circular round spots on beads, if not prominent, may be called spots or circular dots, but if prominent had better be called "eyes." They may be simple, or surrounded by rings, the widest of which may be called a zone.<sup>1</sup> Beads of this interesting pattern have been described as "variegated beads in blue, yellow, and white"—a singularly unfortunate description, as incorrect as it is misleading.

*Technique.*—The technical construction of a bead is of the highest importance, for it varied during different periods, especially as regards eye beads, as will be described in detail later on. Flinders Petrie was perhaps the first to point out that the earliest glass beads, about 1400 B.C. to 600 B.C., were laid over a wire and that in separating them from the rod their ends were drawn out to a short nib.<sup>2</sup> Later on the ends were cut off by beating, or the beads were made from cut rods or moulded, and yet later they were made from blown glass, all of which methods are of importance to describe. The size of the bore is of the highest importance, because the old Egyptian beads, especially the eye

<sup>1</sup> Flinders Petrie refers to such beads as the "aegis of Bast." (*Hyksos and the Israelitic Cities. Brit. School of Archaeology. London, 1906, pls. XIX E and XIX A.*)

<sup>2</sup> *Tell el Amarna, figs. 53-61. Pl. XIII. London.*



beads and the melon beads, are only, or principally, distinguished from similar beads of the period from the ninth century B.C. to the third (?) century A.D., by their narrow bore, the latter beads having an enormously wide bore. At the end of the Ptolemaic empire, new technical discoveries were made—mosaic or the millefiori process—and soon employed almost exclusively. As an instance of the importance of observing details, I will only mention one instance connected with the millefiori process. Among the beads of the Palace of Amenhotep are some of a cylindrical shape, one end being capped by a ring of different colored glass, generally yellow, while the base color is deep blue. Somewhat similar beads of slightly different colors are very common in Egypt, and are found in all collections. In museums they are generally classed with the beads of the XVIII–XIX Dynasties. In examining a large collection of many hundred beads of this kind, I found one bead which had impressed on it a fragment of a minute pattern of mosaic glass. This at once revealed the fact that this large class of beads must be dated later than the first century B.C. and probably later than the first century A.D. I placed them in the second century A.D., on account of other characteristics. Later I discovered that Flinders Petrie had already mentioned these beads. In *Hyksos and the Israelitic Cities*, pl. XLVII, fig. 198, p. 60, he says: "brings this cemetery down to the first and second centuries A.D.," without, however, referring to these beads in particular. There was thus more than one kind of evidence to date these beads with considerable correctness. The same experience was had with the type (PLATE I, Fig. 63) in which the peculiar blue of the base would classify it as old Egyptian. As a rule the eye-spot in this type consists of a simple dot, but one bead of a lot of fifty possessed an eye-spot made of a fragment of mosaic glass. These beads were then placed, also for other reasons, in the middle of the fourth century A.D., and this date was later corroborated in another way.

**EYE BEADS. Classification of Types.**—The only manner in which eye beads can be classified is according to the technique employed in producing the eyes. This is the only classification which shows a chronological sequence, the only one useful to the student of archaeology. Before entering upon details it may be well to describe the eyes first in a general way for the benefit of those who do not wish to make the study of beads a specialty.

*Simple Eyes.*—The eye consists of a single drop of glass or

other material, more or less deeply pushed into the matrix (Figs. 5-11). It is sometimes possible to determine whether the eye-spot is the result of a semiliquid drop of glass, or whether it was produced by pressing a cut or broken fragment of glass into the soft matrix. The fragment generally shows sharp irregular corners. The eyes in Figures 5 to 11 were all made of drops.

*Painted Eye-Rings.*—The earliest type of eyes found on clay or paste beads. The rings were evidently produced by pressure and filling in with pigment. In Asia Minor, Greece, and Italy spindle whorls of clay often possess rings produced by impressing a coil or twisted thread or wire into the soft clay before firing. The coil left a pattern which is both ornamental and characteristic. The Egyptian beads of this kind with painted eyes date apparently from the XIX Dynasty (PLATE I, Figs. 1 to 4).

*Inlaid Coils.*—The eye spot is produced by a drop of glass, but the eye ring or rings by pressing a single or composite coil of glass into the matrix, the coil forming the ring. The earliest seem to date from the XIX Dynasty. Such beads continued to be made until the time of the Ptolemies, when the process of cut off rods was invented, or came into use (Text, Fig. 1; PLATE I, Figs. 29-35, 38, 45-47).



FIGURE 1.—  
BEAD WITH  
INLAID COIL<sup>1</sup>

*Stratified Eyes.*—The eyes are produced by placing upon the matrix a drop of glass and rolling it in while the matrix is soft. On top of this zone another drop of a different color is placed and similarly rolled in. When the eye has received as many superposed drops as required, the sides of the cone are ground off in order to permit the lower layers to appear on the surface as rings. If, however, the drops have been properly graded from larger to smaller, the grinding off is not necessary. In some instances it appears that the whole eye was made separately and then pressed in the bead matrix (Text, Fig. 5; PLATE I, Figs. 40, 41) or the whole



FIGURE 2.—  
BEAD WITH  
STRATIFIED  
EYES<sup>2</sup>

bead was made up of several shields of such superposed drops, previously ground off. Such eyes date from the time of the XIX

<sup>1</sup> Cross section of a bead of the eighth century B.C., with three rings produced by pressing a simple coil into the matrix which forms the eye-spot. The square small fields are cross sections of the coils.

<sup>2</sup> Cross section of a stratified eye bead with four eyes, showing the saucer-like appearance and positions of the layers. The central black is the eye-spot.

Dynasty and continued in use until the time of the Ptolemies, after which time the process fell into disuse, the process of cut off rods having been invented, which permitted the artisan to produce eyes with greater facility and with less skill (Text, Figs. 2, 5-18; PLATE I, Figs. 54, 56-59, etc.).

*Dipped and Cut Off Rods.*—This process first appears in the fifth century B.C., but did not become common until the last part of the first millennium B.C., after which time it superseded the stratified process entirely. A rod of glass was dipped in successive baths of liquid glass of alternating colors, and, when cool, hacked off into disks, each disk forming a ready made eye which had only to be pushed into the soft matrix of a bead to form an eye with rings (Text, Fig. 3; PLATE I, Figs. 55, 60-64). Of this process we have two distinct types: one in which the eye

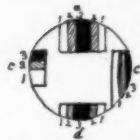


FIGURE 3.—BEAD  
MADE WITH CUT  
OFF RODS<sup>1</sup>

consists of a central spot surrounded by one or more rings (Text, Figs. 3, 4), and one in which the eye is more complex, surrounded with rings, dots, bars, etc., produced by a number of rods having been fused into one. This is the millefiori process proper. This process is the one used to this day.

*DETAILED DESCRIPTION. Painted Eye-Rings* (PLATE I, Figs. 1-4). This type is principally confined to paste beads of the XVIII Dynasty, at least I have been unable to date any earlier. One bead is from the Palace of Amenhotep, but none was found in that of Kuenaten at Tell el Amarna. They are thus older than the eye beads of glass, and it appears probable that the latter resulted from an endeavor to produce eyes with rings on glass beads similar to those produced so readily on paste beads by a simpler method. The latter method is, if I am correct, thus slightly earlier. In general the beads are monochrome, shades of the blue and green characteristic of the period, the impressed rings having been filled out with pigment slightly deeper in color, but of the same shade as the matrix. The only bead known to me of this kind consisting of two colors is one in the Archaeo-



FIGURE 4.—  
VIEW OF  
ROD<sup>2</sup>

<sup>1</sup> Cross section of an eye bead, the eyes produced by cut off rods. *a* and *b* are perfect eyes, the left *c* is a mere chip, cut off diagonally, while the one to the right, *c*, is cut off longitudinally, thus appearing on the surface as parallel bars.

<sup>2</sup> Exterior view of a rod used to produce eyes, the rod being cut off in thin slices, each slice producing an eye with rings.

logical Museum of Florence, Sala VII (no number or date). This bead is white, with the eye-spots and rings blue-black or black. It is strung in connection with beads of uncertain date probably derived from different finds, like almost all the necklaces in this collection, procured from or donated by private collectors. I think this bead can be dated to the XVIII Dynasty. The artistic expression of these beads is simple and charming, more soft and harmonious than the eye beads of glass with their gaudy colors, which, seen at a distance, are, however, more effective and striking. Similar beads of paste are common in Egypt, and tourists must have carried away innumerable specimens, all private collections containing many.

*Earliest Glass Beads.*— In his work on glass, Kisa<sup>1</sup> states: "how far back these glass beads date is not to be precisely determined, but anyhow they go back to the XII Dynasty." There is no evidence that this is correct, and so far as I know there are no glass beads as early as that dynasty. The very remarkable collections of beads and other material excavated by the expedition of the Metropolitan Museum, in tombs of the XII Dynasty, contain not a single bead of glass. Kisa himself (p. 120) states that the earliest dated glass beads are those two with the cartouche of Queen Hatshepset.<sup>2</sup> One of these is pale blue and now in the private collection of Professor Wiedemann in Bonn; the other is of a dark or blackish green glass, now in the British Museum. Upon this latter some doubt has been thrown, some claiming that it was not of glass but of obsidian. Kisa, however, says that chemical examination has decided in favor of glass. These two beads, both with the Queen's cartouche engraved, are also the oldest glass beads known with certainty. If glass had been known before the time of Queen Hatshepset, it seems probable that it would have reached a greater development in her time than is indicated by these two beads—one pale blue, one dark or black-green—with the queen's name. In the time of Amenhotep III, glass beads had, however, reached a great perfection. The collection made by Messrs. A. M. Lythgoe and H. E. Winlock in the Palace of Amenhotep at Thebes contains magnificent specimens of glass beads, but, though they are of

<sup>1</sup> Anton Kisa, *Das Glas im Altertume*. Hiersemanns Handbücher, Vol. III. Leipzig, 1908.

<sup>2</sup> The Hatshepset beads were first described and figured by J. Gardner Wilkinson, *Manners and Customs of the Ancient Egyptians*, Vol. II, p. 141. London, 1878.

brilliant colors and made with great technical skill of fine, hard glass, their ornamentation is devoid of rings, bands, or eye-spots, so characteristic of a later period.

*Beads with Eye-Spots. Eye Beads.*—These beads, as has been stated, can be divided into three classes according to the technique used in producing the eye. Fortunately these processes follow each other in chronological order, and, once the technique is understood, a clear idea of their chronology is possible. The earliest beads with eyes can be divided into two series according to the presence or absence of eye-rings. Simple eye-spots, and beads surrounded by rings, continued to be in use at the same time, but of the series with eye-rings we can conveniently separate two types. One is simple, the eye being surrounded by one or two wide rings, the other is more complicated, with alternating rings in different colors, generally characterized by the narrowness of the rings. The simpler type appeared shortly after the appearance of the eye bead, the latter type developed later. It is of importance to determine the earliest appearance of each type or series.

*Simple Eye-Spots.*—The earliest eye beads of this kind seem to be those mentioned by F. L. Griffith (*Tell el Yahudiyeh*, Egypt Expl. Fund. Mem. 7, London 1890, pls. XV and XVI, p. 47). They are described as "glass beads, variegated yellow, white and blue with red eyes." Some of these from tumulus IV, 8, were found with a glazed steatite scarab of Ra-men-Kheper or Thothmes III (XVIII Dyn.). Other beads from tumulus IV, 2, are described as "beads of glass, opaque blue and greenish white (?) with red eyes." Found with a scarab of Rameses III (XX Dyn.). These two sets of beads appear to be similar. On page 48 of the same paper, we read: The general result of these excavations in the tumuli is to show that they belong to the XX Dynasty at least as early as the central period. Out of the first seven tumuli, there is nothing certainly later or earlier than this—the scarabs of Rameses III and IV tend to fix the date. The scarab of Thothmes is thus disregarded.

The next description that we have of the earliest eye beads is that of Flinders Petrie (in *Illahun*, London 1891, pl. VIII, fig. 10). This is a bead of mixed eye-spots and twisted threads and was found with a scarab of Rameses II (XIX Dyn.). This bead has apparently some eyes with rings, while others are simple. It is the earliest eye bead known.

In *Ehnasya* (Flinders Petrie, *Ehnasya*, Egypt Expl. Fund, Mem. 26, London 1905, pl. XL, fig. 16, p. 34), Petrie figures two beads with black base and white spots, some of which are divided by bars, which do not reach to the bore openings. They are exactly like the one on PLATE I, Figure 5, of this paper. His description reads: "In one case a reed mat was underneath the body, and the black and white glass beads with the carnelian ring on pl. XL, fig. 16, were with another. These beads are of the styles made during the reign of Thothmes III." Had these beads been so early, samples of them would undoubtedly have been found in the Palace of Amenhotep at Thebes or in Akhenaten's city of Tell el Amarna. As none were found in either place, it seems probable that those mentioned by Griffith and Petrie in connection with Thothmes III were not made in his reign and that the scarab with his cartouche was one of the common commemorative type bearing his name but made after his death. The eye-spots of these beads are perfectly circular, with even margins, which could hardly have been attained in the first efforts to make beads. As the origin of the type is to be looked for after the Tell el Amarna period, no earlier date can be assigned to these beads than the XIX Dynasty.

Fortunately for our knowledge of the earliest types of these beads, the Metropolitan Museum contains a magnificent collection of glass beads excavated at Lisht by Mr. Mace and his collaborators. I was permitted to arrange these types, and the result has been most instructive, revealing a number of varieties of eye beads, the chronology of which has until now been in doubt, while the beads themselves have never been properly figured or described. The principal varieties are seen on PLATE I, Figures 5-41. It will be seen that in this collection are a few beads of the types described by Petrie and Griffith in connection with the Thothmes scarab (Fig. 5), but which, in conjunction with the others, can be referred to the XIX Dynasty, or if we follow Griffiths' summary on page 48 (*Yahudiyeh*), to the XX Dynasty. In all these beads with simple eye-spots, these latter are all arranged in a single row around the equatorial of the bead. The Murch collection in the same Museum contains a number of similar types, which undoubtedly belong to the same period as those of Lisht. The two collections seem to give us a fair idea of the eye beads of glass from the best Egyptian period. Especially interesting for the chronology are those on PLATE I,



Figures 25 and 39. They are identical with those described by Petrie (*Meydum and Memphis*, III, Brit. School. London, 1910, pl. XXVIII, figs. 129-132, p. 37), "yellow and black beads and scarab of XIX Dynasty."

Single eye beads of white base with blue, yellow, and red eye-spots continued to be made much later (Woolley and Maciver, *Karanog*, Univ. of Penn. Publications, Pt. 40, No. 7843, 7906. Philadelphia, 1910). These are assigned by the authors to the first and second centuries A.D. Eye beads with single spots are remarkably rare in the Italian tombs of the ninth to the fifth century B.C. They are in use again later in the Lombard or Merovingian beads during the sixth century A.D., as can be seen, for instance, in the Museo Nazionale, Rome (from Castel Trosino, Nos. 65-68, etc.), or in the Stuttgart Historical Museum, Case 31 (from Alb). These latter beads are wonderfully similar to those of the XIX Dynasty, like those figured on PLATE I, Figure 6. Simple eye-spots became once more common during the Renaissance, or after the time of Marco Polo, when the Venetians began to manufacture beads for the oriental nations, etc. Witness, for instance, the innumerable beads found in comparatively modern tombs of the natives of Africa and America.

*Inlaid Rings.*—Before we consider the eye beads with eye-rings, it will be necessary to note the type of ring, produced by simply impressing a ring or coil on the bead, either around the eye-spot, or isolated. In the former the effect is an eye with rings, in the latter we rarely find more than one ring, the matrix of the bead forming the eye-spot. These beads can be conveniently considered under two distinct series: one in which the eye-ring is produced by a twisted coil of glass threads, and one in which we have an eye-ring made of a single, thicker glass thread. The former is illustrated on PLATE I by Figures 29-32, etc., the latter by Figures 45-47. The former is rare in collections, but the latter is very common, especially in Italian tombs.

*Inlaid Coils* (Text, Fig. 1, PLATE I, Figs. 29-32, 33, 34, 35, etc., 45-47).—Eyes produced by a combination of simple eyes and inlaid coils are contemporary with those of the XIX Dynasty made by stratification alone. Such eye beads are among the most beautiful as well as the most complicated of all beads. The finest I have seen are those of the Murch collection, Figures 29-32, which can be dated, I think, with certainty to the time of Rameses II. The coil used in producing these eye-rings



consisted of twisted threads of glass of two distinct colors, generally blue and white, or black and white. They were sunk in the matrix around the eye, and are generally characterized by the ends of the coil not meeting, sometimes stopping some distance from each other, sometimes overlapping (PLATE I, Figs. 35, 38). The effect is rich and as beautiful as the process was difficult, requiring much care in execution. The earliest mention of such beads is by Flinders Petrie (*Illahun*, London 1891, pl. XVIII, fig. 30): "black, with blue pattern. Eye beads, black, white, and yellow common." The description does not refer to the structure and does not accentuate the appearance of the bead, but a glance at the figure shows it to be of the same type as those in the Murch collection in the Metropolitan Museum, a twisted coil of glass, with minute eyes on each side, and a rim of a twisted coil around the bore of the beads. Petrie's beads were found with a scarab of Rameses II. Beads with such coils, but without eyes, are found in the Lisht collection excavated by Mr. Mace. The Murch collection, however, makes us acquainted with many varieties, the base of which is pale blue (PLATE I, Figs. 29-30) or pale lemon (Fig. 32) or bright orange (Fig. 31), while the coils are made up of black, white, and blue threads (Figs. 29-34, 35, 38). Another type consists of sherry-colored base, with twisted threads of black and white, or brown and white. This pattern does not seem to have lasted long, and I do not know of any later than the XIX-XX Dynasties.

The Egyptians of this period also employed twisted glass threads in making the rims for glass vessels, a practice revived by the makers of mosaic and millefiori glass during the early part of the Roman Empire. During the third and fourth centuries A.D., the twisted thread ornament came once more into vogue, and beads with such ornaments are well represented in the Metropolitan Museum. The color of these beads of the fourth century A.D. is generally fine, but their technique is clumsy, the eye-spots ranging from microscopic minuteness to unusually large size. The Venetian glass-makers have made use of such inlaid coils since the time when they began to make beads, and some of their earliest beads are now sometimes found as intrusions in antique collections, as, for instance, in the Corchiano collection in the Museo Etrusco in Rome, and are generally dated from the fifth century B.C. One of the

best necklaces (XIV, No. 6036-6055) contains a bead, the second, left from centre, with eyes of dark green, eye-rings white. The rings consist of three twisted threads which are so carelessly impressed on the eye-spot that they extend over on the matrix of the bead. This technique was not used in connection with eye beads of the fifth century B.C. Searching the records of the necklace, Dr. Giglioli found that it had not been excavated by the Museum authorities, but had been purchased from a dealer, Sr. Benedetti, September 24, 1894. By a fortunate coincidence, a few weeks afterwards, I discovered in the Linden Museum in Stuttgart, an exactly similar bead, of the same color and technique from Ashanti, and of undoubted Venetian make. The two beads resemble each other sufficiently to warrant the belief that they were actually made by the same artisan.

*Eye-Rings of Single Thread.*—Beads, generally of a pale dull blue, sometimes blue-gray or blackish, are found in Italian and Syrian tombs of the ninth to the fifth century B.C. They are especially common in the eighth century B.C. A necklace in the Museo Etrusco, at Rome, from Falerii, XXXII, is found with a scarab of Pharaoh Piankhi (about 766 B.C.). Nearly all the necklaces in this collection contain numerous Egyptian paste beads, which would indicate that intercourse with Egypt was lively during that time. Still it is doubtful if these blue beads, with the eye consisting of a simple glass ring pressed into the matrix, could possibly have been manufactured in Egypt. These pale blue beads are so common in Italian tombs of this century that almost every Italian museum contains thousands. The beads are irregular and so badly made that the rings have frequently dropped, leaving a cavity in place of the glass filling. Most of these beads have two or three eyes (PLATE I, Figs. 45-47).

Beads of another type, larger in size, finer in color, and better made are found, but scarce, in the same tombs. Their color is often intense ultramarine blue, and the inlaid rings mostly deep yellow chrome. The Italian authors refer to both classes of beads as "turchino" without considering the distinct differences in shade and quality. One of these beads is Figure 48, PLATE I. This fine type of bead was perhaps made in Egypt. They have been described by Giovanni Lanza (*Lazio*, Rome, 1905, pl. XIII, fig. 10), and by almost all investigators who have occupied themselves with Etruscan archaeology.

*Stratified Eye Beads with Rings.*—The technique of these

beads has already been described in the beginning of the paper, page 5. Text Figures 2, 5-14 all illustrate the type. The whole construction of the eye can be compared with a set of differently colored saucers, of different sizes, the largest of which are at the bottom and the smallest at the top. The invention of this method caused a veritable revolution in the production of beads, and the method undoubtedly soon became very popular. There are no beads with stratified eyes in the collections from the Palace of Amenhotep, none from the city of Akhenaten at Tell el Amarna. In the excavated material from Lisht, stratified eye beads are numerous, and many are found in the Murch collection. The type continued to be made until the fourth or the third century B.C., but was about that time superseded by the technique of cut off rods.



FIGURES 5-8.—STRATIFIED EYE BEADS

There are two distinct classes of this type of beads. One is represented by the Lisht beads (PLATE I, Figs. 17-39). This type is the earliest, dating from the XIX Dynasty, or if we follow Griffith (*Yahudiyeh*, p. 48) from the XX Dynasty. As regards the chronology, the same arguments can be used as in the discussion of the single eye beads (pp. 5 to 10), and need not here be repeated. The other class is represented by Figures 40 to 54. The latter differs from the former in having the eyes approximated, or in rows frequently surrounded by many rings, of various colors. The eyes of this type more truly resembled real eyes than did those of the former type. The first to describe these beads

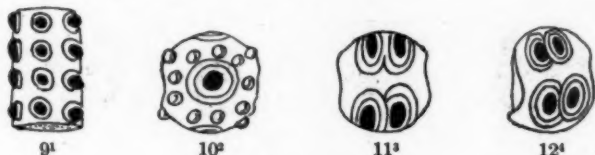
<sup>1</sup> Surface view of a stratified eye bead, the eyes consisting of shields, four of which have been used in building up the eye. XXII-XXIII Dynasties, Egypt.

<sup>2</sup> Surface view of a stratified eye bead with six eyes, three of which are represented. Fifth century B.C.

<sup>3</sup> Lopsided eye bead with stratified eyes, two of which are shown. The larger eye caused the matrix to extend. Fifth century B.C.

<sup>4</sup> Surface view of a stratified eye bead with five rows of eyes. Fifth century B.C.

was Flinders Petrie (*Hyksos and the Israelitic Cities*, London, 1906, pl. XIX, and *Meydum and Memphis*, London, 1910, pl. XXVII, figs. 129 to 137). But before entering into the details of the chronology it will be well to point out that these beads were made by two different processes of stratification. In one of them the eyes were built directly on the matrix of the bead and rolled in (PLATE I, Figs. 43, etc.); in the other the eyes seem to have been made separately like shields, several shields composing a bead with no other matrix than a core. The former process is represented on PLATE I by Figures 50 and 51, etc., the latter by Figures 40 and 41. The lines on the bead show clearly where the eyes join (Text, Fig. 5). There is no bead matrix visible, and if there is any, it is hidden below the shields.



FIGURES 9-12.—STRATIFIED EYE BEADS

Beads like those illustrated on PLATE I by Figures 40 and 41 are undoubtedly much earlier than those of Figures 50 to 53, and possibly earlier than that of Figure 42. The chronology of eye beads is of very great interest for the reason that the greatest number are found in Italian tombs of the fifth century B.C., being singularly absent from the tombs of the preceding centuries. If these beads are found in Egypt at an earlier date, we must in some way account for their absence in Italian tombs of the eighth and seventh centuries B.C. Three explanations are possible. (A) Petrie dated his beads too early, and the Italian beads are dated too late. In this case the Italian and the Egyptian beads might be of the same time, and from the same factories perhaps, as it is probable that they were all made in Egypt. (B) The

<sup>1</sup> Stratified eye bead, cylindrical form, eyes projecting and in rows. Fifth century B.C.

<sup>2</sup> Surface view of eye bead with stratified eyes and knobs. Fifth century B.C.

<sup>3</sup> Stratified eye bead with paired eyes. Fifth century B.C.

<sup>4</sup> Stratified eyes, in pairs. Bead lopsided. Fifth century B.C.

Egyptian beads were discontinued during two whole centuries. This is not probable, though I think that Petrie has somewhere expressed such an opinion, though I cannot now lay my hand on the record. (C) The communication with Egypt was interrupted during the eighth and seventh centuries B.C. This again seems improbable, because we find in the tombs of Veii and Falerii, near Rome, innumerable Egyptian paste beads, dated by the scarab of Piankhi, and entirely similar to the degraded type of paste beads of that time in Egypt; and in all these tombs of Etruscan times there are no beads similar to those described by Petrie (PLATE I, Figs. 40, 41), and very few, if any, like those of Figures 50, 51, 54.

We will now see what Petrie says upon this subject (*Illahun*, London 1891, pl. XXIX, figs. 52, 53); these being beads similar to the one figured on PLATE I, Figure 42. Page 26 he says: "The glass beads of plain colors have just vanished; and the eye beads of the Ramessid time (pl. XVIII, fig. 30) have turned into a rather scarce class of blue eye beads, with fine veins of brown and white around the eye (pl. XXIX, figs. 52, 53)." This is under the heading of the XXII Dynasty. In *Meydum and Memphis*, London, 1910 (pl. XXVII, figs. 129 to 137), in regard to a bead No. 135, he says: "The eye bead 135 is white with blue spots, a brown ring around them and a green wavy line." This bead is under the heading of the XIX Dynasty. Petrie's figure 137 resembles my Figure 43. Of this he says, page 37: "A bronze ring and a green bead with blue spots surrounded by goldy-brown lines and white." Such beads are well known, especially in the Delta, where they are dated to the XXIII Dynasty. In *Hyksos and the Israelitic Cities* (Brit. School of Archaeol., London, 1906), Petrie, pls. XIX and XIX A, figures a small number of these beads. The tops of the plates are marked XXIII (?) Dynasty. The beads of Petrie's figure 66 are less like our beads, having three eye-rings in a row, but those under figure 307, eleven in number, seem to resemble exactly my Figure 42. These are from Yehudieh. Pl. XXXVI, from Tell er Retabeh (Raamses), contains two beads, one of which resembles my Figure 42, the other Figure 47. Both are marked "about XXIII Dyn." If I interpret correctly these opinions, set forth at different times by Petrie, it would seem that he wishes to date these beads not earlier than the XXII Dynasty and possibly later than the XXIII. This brings us down to the middle of the eighth century

B.C. All these varieties mentioned by Petrie seem to be of one type, blue eye-spots surrounded with brown rings. In Italy not one of these beads has been found earlier than in the fifth century B.C. See, for instance, the Barberini collection in the Museo Etrusco, Rome; also in the Mariano Rocchi collection from Perugian tombs.

The earliest glass beads with stratified eyes found in Italian tombs come from the "Tomba della straniera" at Vetulonia, and are now in the Museo Archeologico at Florence. The bead is represented on PLATE I, Figure 43, and requires no further description. Two scarabs near by seem to be of the XXII or XXIII Dynasty. But beads of this type are so rare in Italian tombs, that I know of few that can be dated to the ninth or eighth century B.C., with certainty. A bead like Figure 50 but with smaller bore is exhibited in the Museo Etrusco, Rome (under XXXIX, 3965, Falerii), together with beads of the eighth century B.C. Another tomb find near by (Falerii, No. XXXII, No. 4186) contains 23 eye beads similar to Figures 45, 46, 47, 51, 53, 54 of PLATE I. The pendants in this necklace are like some of the eighth and seventh centuries, but the beads resemble those of the Italian tombs of the fifth century B.C. Both of these finds are thus doubtful, though they tend to show that these beads or bead types appeared earlier than the fifth century B.C. The latest dated eye beads with stratified eyes come from the fourth century B.C. (Fig. 57, from Priene, in Asia Minor,<sup>1</sup> which cannot be dated earlier than 390 B.C.). Of the eye beads of the third century B.C. of similar types I have no record. Those from Zollikofen, in the Berne Museum, are of a distinctly different type.

*Distinct Types of Stratified Eye Beads.*—There are many different types, but it frequently happens that several are used together on the same bead. The following are most readily distinguished.

A. Eyes separated and placed in a single row around the equatorial of the bead (PLATE I, Figs. 12-25; Text, Fig. 6).

B. Eyes in two rows, sometimes approximated so as to resemble animal eyes (Text, Fig. 12; PLATE I, Figs. 50, 51, 53, 54). Sometimes alternating (Fig. 55), having three eyes at one pole and four minor ones at the opposite end.

C. Eyes relieved by interspersed knobs (Text, Figs. 10 and 15).

<sup>1</sup> Private collection of Prof. Dr. Paul Wolters in Munich, who kindly permitted me to make a copy.



Some of these beads are cylindrical (Fig. 15), others spherical (PLATE I, Fig. 52; Text, Fig. 10).

D. Eyes placed in many parallel rows (PLATE I, Fig. 54; Text, Fig. 8).

E. Eyes small, placed in groups on a specially colored, most generally brown, field (PLATE I, Figs. 55, 56; Text, Fig. 14). Fifth century B.C.

F. Eyes rather simple, strongly projecting. Bead generally square. Plate I, Fig. 49, view from the side. Appears confined to the eighth century B.C.

G. Two kinds of differently colored eyes alternating. One set paired, the other in a single row (Text, Fig. 13). Only known from the fifth century B.C.

H. Eyes small, elevated like knobs, placed in parallel rows running from pole to pole, the bead being cylindrical (Text, Fig. 9). Fifth century, B.C.



FIGURES 13-16.—STRATIFIED EYE BEADS

J. Bead made up of two or three three-cornered beads, with strongly projecting eyes, the latter being in the corners of the beads. Characteristic of about the third century B.C. (PLATE I, Fig. 59. Text, Fig. 17 is a single eye-knob.)

K. The eye or eye-spot is formed of a comma pressed on a stratified shield. This type occurs in two widely separated periods: the XIX Egyptian Dynasty and the fourth and third centuries B.C.

<sup>1</sup> Surface view of stratified bead, type G, described above. Two of the eyes are black and yellow, while the smaller eyes are blue and white. Fifth century B.C.

<sup>2</sup> Stratified eye bead, with two classes of eyes, one isolated, the other in sets of seven in a shield of white and brown, all produced by stratification. Type E.

<sup>3</sup> Cylindrical eye bead, stratified. The knobs arranged in rows at the ends. Fifth century B.C.

<sup>4</sup> Stratified eye bead, with comma eyes. Fourth to third century B.C. Type K.



L. Gold-glass eyes. The central eye-spot is made up of gold glass. These seem to belong to the third and second centuries B.C. (PLATE I, Fig. 58. Text, Fig. 18 shows a section of an eye.)

Considering the manner of the technique we can add another type or two according to the width of the bore. The earliest eye beads of the type referred by Petrie to the XXII-XXIII Dynasties, appear, if I may judge from his drawings, as well as from specimens from Egypt, to possess a comparatively narrow bore, while those from Italian tombs have a very wide bore, so wide that the beads have been described as rings. The width is due to the beads having been made over a rod, instead of a wire, so that they should not turn around when the eyes were inserted (PLATE I, Figs. 50, 51; Text, Fig. 7). The earlier beads seem to have been built up of ready-made eyes, so that little or nothing of the matrix is visible. But I have also seen beads of this kind, though rarely, from Italian tombs (Text, Fig. 5; PLATE I,



FIGURES 17-19.—TYPES OF EYE BEADS

Figs. 40, 41, and possibly 42, which is made after Petrie's descriptions).

The three last mentioned types, J, K, and L, require more attention. They are certainly all later than the fifth century B.C. I know of few found in Italy. The one I have figured is from the Historical Museum in Berne, Case 24, Zollikofen, Nos. 24012, 10155; others are from Savieza, No. 18931; Rüchingen

<sup>1</sup> Surface view of stratified eye knob, with three dark and four light rings. The eye-spot is of clear transparent glass. The dotted line shows the depth to which the knob has been ground off. First in the XIX Dynasty, later in the fourth to the third century B.C.

<sup>2</sup> Section of a gold-glass eye. The eye-spot is transparent white glass, the ruled section represents the gold layer, which consists of a thin film reflected through the transparent eye-spot. Third to second century B.C.

<sup>3</sup> A modern Arabic Fatma eye, one half natural size. Base matrix pale blue. Central eye-spot black. Inner ring white, opaque; outer ring deep ochra yellow. Arabic.

and Grosshochstetten, Grab 1, No. 23747. In the Historisches Landesmuseum of Zürich there are many others, for instance Case 60, Nos. 15213, 1527. All are dated 'Late Latène,' a rather indifferent chronology, considering the divergent opinions as to the ending of the Latène period, which some place in the last century B.C. while others protract it into the Christian era. Prof. Dr. P. Reinecke, who is the first to make a scientific study of beads,<sup>1</sup> places these two types with projecting triangular corner, and those with the comma-eyes in the "second half of Latène."

The type with the spiral eyes (Text, Fig. 16) is the most interesting to Egyptologists, being, as it were, a resurrection of the comma-eye beads of the XIX Dynasty (PLATE I, Figs. 27, 28). I know of no beads with such ornamentation from the long period between XIX Dynasty and the fourth or the third century B.C. The technique in both sets of beads, the older and the later, is the same,—a spiral or comma, superposed on a differently colored shield by means of stratification. Some of these late comma beads have the same wide bore and lopsided form which characterize the beads of the fifth century B.C. (PLATE I, Figs. 50, 51). The colors are, however, rarely yellow, but more generally deep, dull ultramarine blue base, white, narrow, shield, and deep chrome yellow comma. Yellow base is, however, not unknown, as is shown, for instance, by Figure 231 on Reinecke's chart. The type probably continued into the first century A.D., as would be indicated by a bead in a large and fine necklace in the University Museum of Perugia,—base fine Venetian red, shield white, comma blue. There is, however, much doubt about the nature of the necklace, which seems made up of beads from many periods, and it is not impossible that this red base bead is a companion to the gold glass eye bead of the third century B.C. (PLATE I, Fig. 58). Beads of this fine red base color are rare before the Roman Empire, at least in Italian tombs, but become numerous in the beginning of the imperial period.

*Intrusions of Stratified Eye Beads.*—Kisa and others contend that stratified eye beads continue to the time of the Lombards, evidently founding their opinion upon stratified beads found in necklaces of that time. Such are, for instance: Rome, Museo Nazionale, Castel Trosino, Necklace K; Nocera Umbra, CXII

<sup>1</sup> P. Reinecke, *Glasperlen vorrömischer Zeiten*, in *Altertümer u. Heid. Vorzeit*, Bd. V, Taf. 14, p. 60. Mainz, 1911.

and CV, both of which contain beads exactly similar to Figures 50, 51, 54 of PLATE I. In the Museo Cristiano in the Vatican Library, in the right-hand case near the door to the octagonal room, is a necklace with enormously large, typical beads of the third or fourth century A.D. from the catacombs. Mixed in are six beads of the fifth century B.C., like Figures 50, 51, 54. Similar intrusions are often found in necklaces excavated north of the Alps and referred to the Alemannic or Lombard period, but I will here call attention only to the remarkable necklaces from Ober-Salton near Charchow, Russia, now in the Stuttgart Historical Museum, dated in the seventh or eighth century A.D. These necklaces are much older, and mostly made up of beads of the third and fourth centuries A.D., together with some stratified eye beads of the fourth or third century B.C. of the same general type as Figure 59, but black and white. It is in fact rare to find a "Merovingian" necklace which does not contain intrusions derived from old Italian tombs, the preferred spoils of the barbaric invaders during the time of the great migrations. The greatest number of intruded beads in these necklaces are not, however, eye beads but the characteristic large, blue melon beads of the first centuries of the Roman Empire. See the Morgan collection of Merovingian antiquities in the Metropolitan Museum, New York, and the Lombard collections from Castel Trosino and Nocera Umbra in the Museo Nazionale in Rome, where many necklaces contain two or more such blue and green melon beads of glass or paste, the latter kinds especially abundant in early Etruscan tombs.

*Cut Off Rods; Millefiori* (Text, Figs. 3, 4; PLATE I, Figs. 55, 56, 60-64).—The last group or general class of eye beads seems to have originated at some time in the first or second century B.C. The technique has already been described (page 6). There are no data to fix the exact time or the place of the invention, but it seems probable that it took place in the time of the later Ptolemies and in Egypt. The earliest dated bead of this kind which I have seen is one in a necklace in the Alte Akademie in Munich, from Percheling, dated "time of Augustus." It forms the centre of a necklace of 45 gold-glass beads and four glass beads. The bead has a base of blue-gray glass, with a girdle made up of a window pattern of white, green and red minute squares.

Another bead, possibly made by cut off rods, is the one represented by Figure 55. I was not able to examine this bead

microscopically, but the minuteness of the eyes and ring would indicate that it was not made by stratification but by a cut off rod, which, first coarse, had been drawn out to diminish the pattern. If this is correct, the invention of the process can be dated back to the fifth century B.C. Certain it is, however, that the process did not come into general use until much later, a fact rather against the earlier date for its discovery, for when the process was once invented, eye beads could be manufactured with a facility and at a cost lower than before. A thousand eyes could now readily be produced in the same time as a dozen of the stratified kind.<sup>1</sup>

To discuss the numerous varieties of mosaic eye beads, would take up a volume or two, and I must confine myself to pointing out the more characteristic periods of these beads.

*First Period.*—From the early part of the Roman Empire, or from the end or, possibly, middle of the Ptolemaic period, and

<sup>1</sup>There is much divergent opinion concerning the time when mosaic glass was discovered, but a study of the collection of glass from the Palace of Amenhotep shows that four of the types date from that period. The following types of mosaic glass can be distinguished. *Fern and feather pattern.* Already perfected in the time of Thothmes III. and has been in use ever since. Its technique consisted in winding bands of glass around a cylinder and then while yet soft dragging or combing them up and down. *Breccia or agglomerated glass.* First found in the Palace of Amenhotep. It is made of varicolored fragments of glass sufficiently fused to form a solid mass. *Stratified mosaic.* Earliest specimen found on a ring from the Palace of Amenhotep. It consists of narrow bands of glass placed side by side or in layers and then rolled to the required thinness. In the Amenhotep specimen the bands are microscopic. The type becomes common in the Ptolemaic period. *Incrusted mosaic* becomes common in the ninth century B.C. It consists of a plain matrix of glass into which fragments of other glass are rolled in. *Onyx glass.* Made to imitate onyx and similar stones. It consists also of thin layers of glass which were rolled thin and then bent to form waves. This type is also found in the Amenhotep collection, but becomes common in the fifth century B.C. *Columnar mosaic.* Dates from the Ptolemaic period. Also called millefiori. Consists of innumerable rods of glass placed on end and then fused together. The mass was then cut transversely in sections. *Lamellated or Lamella glass.* Dates from the end of the Ptolemaic period. The lamellae or flakes of glass were placed horizontally on a flat sheet of glass, then fused and rolled in. *Maculated mosaic glass.* Sections of rods or fragments of glass were dropped into a fused matrix of another color and then stirred or dragged so as to form comet-like blotches and figures. Earliest is from the fifth century B.C. It becomes the most common type in the fourth century A.D. We have beads made of all these types. The *columnar* has furnished material for all the varieties of composite eyes since the type was first invented, with only a single exception, (PLATE I, Fig. 65) in which the ring consists of a twisted coil.

ending before the time of Constantine. Characterized by an abundance of clear glass, bright colors, fine technique, and with varieties with window pattern, scroll pattern, face beads, and mosaic-pattern of distinctly Egyptian type. In this period we also find numerous melon beads of translucent glass, characterized by rounded lobes and usually wide bores.<sup>1</sup>

*Second Period.*—The time of Constantine, not well defined, but including parts of the third and fourth centuries. Few of these beads have been described or grouped together as a whole. The beads are characterized by having eyes made of small disks, placed on the top of the matrix, and rarely rolled in (PLATE I, Fig. 63). The eye-spot is either very minute or very large, nearly always vermilion red, while the disk is pale lemon yellow. Flinders Petrie<sup>2</sup> is the first to figure such a bead and refer it correctly to the middle of the fourth century B.C.

The Murch collection in the Metropolitan Museum contains many beads of this kind. In some beads the eyes are strongly convex, made of mosaic rods, of millefiori pattern. The colors are fine, deep blue, blue green, light ash-blue, recalling the colors of the XIX-XX Dynasties. Other beads recall the triangular type of the third and fourth centuries B.C., with many eyes, which project by heavy knobs, but now made of cut off rods, instead of stratified glass as in the earlier beads. Other beads have inlaid coils of twisted threads, recalling those of the Rameside time, so that we can characterize this period as a kind of revival of early types. Black glass seems very common, and the technique is always coarse.

*Third Period.*—It is unknown when this period begins, but we find it well defined in the sixth century A.D. This degraded period of artistic work is characterized by a poor technique, coarse colors of red, yellow, brown, by a scarcity of blue and green, except the bright "arsenic" or emerald green, which, together with certain bright and really fine shades of lemon and deep orange, now appears for the first time. In this period the "links" or crossed wave bands are common. The eyes are often square, and the beads often cubical or three-cornered. There is also a revival of the fern and feather pattern, produced by dragging the superposed spiral rings in one or two directions. Eye beads with knobs are common. Transparent glass is rare.

<sup>1</sup> James Curle, *A Roman Frontier Post*, London, 1911.

<sup>2</sup> *Tanis*, Egypt Expl. Fund, London, 1886, Part II, Pl. VII, fig.

These beads are variously known as Merovingian, Lombard, or, in Germany, as "Alamannen." The principal collections, dated by coins of the sixth century A.D., are in the Museo Nazionale, Rome, from Castel Trosino and Nocera Umbra. The collection of J. P. Morgan of Merovingian beads in the Metropolitan Museum contains many and interesting necklaces of this period, which French investigators consider continued into the seventh and eighth centuries A.D.<sup>1</sup>

*Later Mediaeval Types.*—The material wherewith to judge the Carolingian beads and those of the period immediately preceding the Venetians, is either too scanty or too badly described to permit of discussion. We are told by several French investigators that "the Carolingian beads are similar to those of the Merovingians but very much larger." This statement is quoted in all textbooks which mention beads of this period and does not advance our knowledge sufficiently to characterize the period. Lately Joseph Hampel (*Altertümer des frühen Mittelalters in Ungarn*, Braunschweig, 1906) has described and figured an immense number of mediaeval beads from the earliest time to, and including, the twelfth century A.D. Unfortunately the descriptions are not sufficiently detailed, and the figures are so much reduced and so crudely drawn in line, that our information is not greatly benefited by the great labor of the author. They show, however, that down to the twelfth century A.D. the millefiori process was in use to produce eye beads, and that these collections contain material of inestimable value for future study.

After the return of Marco Polo from the Orient, Venetian factories began to supply beads for export to uncivilized nations, employing principally the millefiori process in producing eyes. Unfortunately these early Venetian beads have never been the subject of study. Our only acquaintance with these beads is derived from examples found in tombs in Africa, America, etc. It seems to be generally presumed that the Venetians imitated the antique beads and that they do so to this day, partly in order to palm them off as veritable antiques. So far, however, I have failed to find a single Venetian bead which resembles an antique type sufficiently to be mistaken for one.

In the present day the Arab glass-workers in Hebron and other places produce large beads with ringed eyes, which are known

<sup>1</sup> Cl. Boulanger, *Le Mobilier Funéraire Gallo-Romain et Franc en Picardie et en Artois*. Paris, 1902-05.



as "Fatma" eyes. This amulet is flat, circular, about one inch across, in the centre being a circular, black, red, yellow or blue eye, surrounded by one or two broad rings of other colors. In the Vatican Museum of Egyptian antiquities are several of these beads or amulets, strung together with Fatma hands of glass, placed among antique Egyptian beads. Many Egyptian collections contain such modern intrusions, variously labeled Egyptian, Greek, or Etruscan (Text, Fig. 19).

*Manner of Recognizing the Types.*—The following hints may aid the student to recognize the three main types.

*Impressed Rings.*—The inlaid rings in these beads rarely adhere well to the matrix of the bead, and many beads are found with only concave ringlets, the impressed ring having fallen out. When the eye-spot is of the same color and quality of glass as the matrix, we can suspect that the eye has been produced by this process. The handsome and interesting eyes and bands of the Italian whorls of the ninth to the fifth century B.C. were always produced in this way.

*Stratified Eyes.*—Examined with a strong magnifier we find that the transparent or semitransparent eye-spot is lighter at the edges than in the centre, which is due to the fact that the spot is more or less lentoid with thick centre and thin edge. The rings are generally very irregular, but the outlines always soft and frequently wavy (Text, Figs. 2, 6, 5). When some eyes on a bead have a different number of rings from other eyes on the same bead, we can suspect that the eyes are stratified. If produced from cut off rods the probability is that all eyes of the same color came from the same rod, thus possessing the same number of rings. The central eye-spot is sometimes fallen, leaving the layer below uniform. Eye-spots differ generally from the bead matrix.

*Cut Off Rods.*—The eye-spot extends all through the eye from top to bottom, and is equally thick in the centre and at the margins. These eyes are often seen to possess a perspective depth, like a rod immersed in water. An eye consisting of an irregular fragment nearly always belongs to this class. The color is thus uniform throughout. Elevated knobs are not likely to be surrounded by rings, except near the apex. Eye-knobs with several rings down the sides are almost certainly produced by stratification (Text, Fig. 17).

GUSTAVUS EISEN.



## EXPLANATION OF PLATE I

## Figures

- 1-4. Glazed paste beads with ringed eyes, produced by painting impressed rings and dots. XVIII Dynasty. Egypt.
5. Glass bead from the author's collection, of a type similar to that described by Petrie as found with scarab of Thothmes III. Also in Lisht; also found in the Murch collection.
- 6-8. Similar types but differently colored. XIX Dynasty. Lisht. Metropolitan Museum, New York.
9. Glass, leaves produced by raking, simple eye. Lisht. Metropolitan Museum. XIX Dynasty.
- 10, 11. Glass, simple eyes. Lisht. XIX Dynasty. Metropolitan Museum.
- 12-26. Eye beads of glass with eye-rings, produced by stratification. From Lisht and Thebes. XIX Dynasty. Metropolitan Museum.
- 27, 28. Glass. Earliest eye beads of glass with comma-eye. XIX Dynasty. Lisht. Metropolitan Museum.
- 29-32. Earliest eye beads of glass with impressed coils, of the same type as the bead described by Petrie in *Illahun*, pl. XVIII, fig. 30, as of the time of Rameses II. Murch collection, Thebes (?). Metropolitan Museum.
- 33, 34. Glass beads with impressed coils and ringed eyes made by stratification. XIX Dynasty. Murch collection. Metropolitan Museum.
- 35-39. Glass pendants and beads which we are now able to fix as from the XIX Dynasty, generally described as from the "New Empire" or XVII-XX Dynasties. 36, author's collection. 37, 39, Lisht. 35, Murch collection. 38, Murch collection,  $\frac{1}{2}$  diameter of original.
- 40, 41. Earliest type of eye bead composed entirely of stratified blocks. Author's collection. Slightly enlarged. XXII to XXIII Dynasties. Thebes.
42. Earliest eye bead with quadruple eyes, according to Petrie (*Hyksos*, fig. I). XXIII Dynasty, from 766 B.C.
43. Earliest glass bead with stratified eyes found in Italy. Tomba della Straniera, Archaeological Museum, Florence. From Vetulonia. Sala I, vetrina III, Nos. 6156-6171. Undoubtedly Egyptian. Ninth to eighth century B.C.
44. Eyes made by stratification. Egypt. Author's collection. Ninth to eighth century B.C.
- 45-47. Earliest simple eye beads, made by impressed rings, found in Italy. A very common type, called by the Italian authors "color turchino con anelli." Generally poorly made. Probably Phoenician. Eighth to fifth century B.C. Most common in the eighth century, especially at Veii. Generally found in necklaces together with

- very clear transparent white glass beads and with amber. Leprignano, Museo Etrusco, Rome. Eighth century B.C.
48. The finest type of stratified eye bead from Etruscan tombs of the eighth century B.C. Glass ultramarine blue, eye-rings chrome yellow. From Agro Falisco, Museo Etrusco, Rome. No. XXVIII—Central case in the second room.
  49. Glass, flat, four cornered bead, a common type in Etruscan tombs of the eighth century B.C. This bead is seen from the side. Stratified. From Falerii, Museo Etrusco, Rome. XLIV—4465, 4019. The bore is generally small, the size of the eye-knob. Color, blue-green. Seen from the top the bead is almost square, with four eyes. A similar bead is figured on Pt. XXXI of *Album Musée Cant. Vaudois*, Lausanne, 1896, and marked "Bronze Age." Probably considered very precious as there is never more than one in a necklace.
  - 50, 51. The most characteristic type of stratified eye beads of the fifth century B.C. in Italian tombs, but also found in Syria and Egypt, Cyprus, etc. The Cesnola collection in the Metropolitan Museum contains a large necklace. Earliest is a single bead from Falerii, Museo Etrusco, Rome, No. XXII; eighth century B.C.; possibly an intrusion. The latest are from the fourth century B.C., in the Arndt collection in the Glyptothek, Munich, Case N, and in the excavations of the "Kabirentempel" at Thebes, Greece, which cannot be earlier than 390 B.C. Munich.
  - 52, 53. Similar type to the last. No. 52 with knobs, isolated eyes. No. 53 with approached eyes. Compare No. 42. Stratified. Fifth century B.C. No. 52 from Padua, Tomba della palazina, Museo Etnografico, Rome, Sala XXXVI, No. 56653. No. 53 is the commonest form in Etruscan tombs. Museo Etrusco, Rome, Palestrina, Barberini collection. Fifth century B.C.
  54. Glass, stratified eyes, ultramarine blue base. Common in Italian tombs of the fifth century B.C. Museo Etrusco, Rome, Corchiano, XVII.
  55. Earliest eyes from cut off rods. Fifth century B.C. Museo Nazionale, Ancona, Sala H, Case 48; marked "primo età del ferro."
  56. A similar type to 55. From the Barberini collection from Palestrina. Museo Etrusco, Rome. Mixed stratified eyes and cut off rods. Fifth century B.C.
  57. Glass, stratified eyes. Seen from top; from Priene; private collection of Professor Dr. Paul Wolters, Munich. Earliest possible date 325 B.C. or fourth century B.C.

58. Glass, stratified eyes, with centres of gold-glass. Giorgio Sangiorgio collection. Rome. Third century B.C.
59. Typical glass bead of the third century B.C. Historical Museum, Berne; from Zollikofen, 24012. Stratified eyes. Some eyes with comma centres.
- 60-62. Glass, time of Augustus. Eyes by cut off rods.
63. Fourth century A.D. superposed disks, of cut off rods. Thebes. Author's collection.
64. Characteristic eye bead, sixth century A.D. Museo Nazionale, Rome; Nocera Umbra, CXL.
65. A Venetian intrusion; in an Etruscan necklace of the fifth century B.C.; Museo Etrusco, Rome; from Corchiano, XIV, 6036-6055, 6044. Third bead, left of centre. Eye-ring made of twisted threads of glass, overlapping on the matrix. Similar to an Ashanti bead in the Linden Museum, Stuttgart.

MIDDLE ITALIAN SIGNETS OF APPROXIMATELY  
350 TO 50 B.C.

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THERE is a very considerable family of ancient intaglio ring-stones of Italian provenance, which I have become convinced should be classified under the above heading. Hitherto, following Furtwängler's classification, they have been placed with the "Early Roman Gems under Hellenistic Influence," and in my own book on *Engraved Gems* I followed this attribution as being the only one with respectable authority behind it or, in fact, with any authority at all. Since then, access to a number of the gems in question and observation of their peculiarities have led me to a closer study and to a change of view.

The first consideration that attracted my notice was the large number of these highly characteristic stones compared with the rest of the so-termed Hellenistic-Roman; then, their distinctiveness and uniformity in style, material, and subjects, which seemed to argue a special origin.

They are all broad ovals—some almost circular—convex and with flat backs. This convexity of the picture surface, I cannot but think, led, superficially enough, to be sure, to Furtwängler's classification. Then—and here we find a divergence from Hellenistic work—they are all done practically entirely with the round drill, as were the Etruscan scarabs of the latest type. The design is brought out merely by a number of saucer-like depressions of varying sizes running into each other or joined by broad lines which are also sometimes used independently. Added to these features are other and very significant elements of uniformity. The material is, with hardly an exception, poor and cheap. Of eighteen examples now before me, thirteen are chalcedonies running from white to brownish, and only one or two are of good quality. Three are carnelians, two of them very dull and opaque, and two are quite ordinary brown sards.

Both the character of the work and the material would seem to indicate that we have here the signets of poor people with a rudimentary art sense; but are they the poorer people of rich

communities, like Tarquinii, Capua, Neapolis, or Rome? If so, should we not look to find, as we do elsewhere, cheap imitations of the styles fashionable among their rich neighbors, instead of something so distinct, characteristic, and simple that every example might well be the product of the same hand?

And now to consider the subjects. Here also we note a consistent uniformity. The Etruscan drill-work scarabs, whose workmanship is similar, pictured generally human figures. These gems show almost exclusively animals; another feature which, considered superficially, may have helped toward the old classification. Of the eighteen examples mentioned, fourteen are familiar birds or beasts, many of them shown in connection with some other object, such as a bird perched on a bud, a gable, a plough, or a bucranium, a goat standing on the prow of a ship, or a dog carrying a strigil and an aryballus. The other four show a

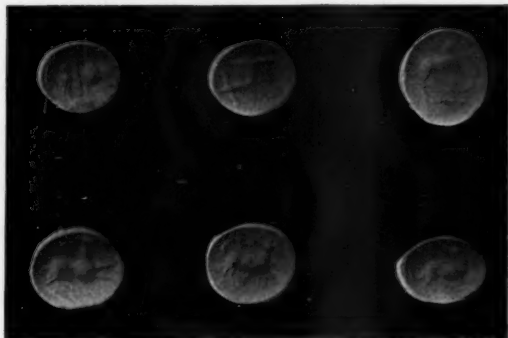


FIGURE 1.—MIDDLE ITALIAN SIGNETS

plough, a club with two doubtful objects crossed behind it, perhaps ox-goads, a Pegasus, and the forefronts of a goat and a dog (?) joined at the middle.

Where now shall we find people whose demands and capabilities would be apt to call into being so distinct a class of signets? Furtwängler speculates very suggestively, though not in this connection.

Speaking of the drill-work scarabs he notes that the religious scenes on them point to an Italian rather than to an Etruscan theology; that they are found all over Italy, which he admits does not mean much in view of the widening traffic, and that their dates are contemporaneous with the supremacy of the Samnites who, he hazards, were surely their spreaders and perhaps in part their makers. As to the scarabs, this reasoning

may be sound, but how much more forcibly does it apply to the gems I am considering!

My own comments on the subject were, I fear, rather in the nature of gropings. I, also, was in doubt whether the drill-work scarabs were made by Etruscans, to a large extent for export, and the subjects modified accordingly, or whether the middle Italians had absorbed some Etruscan ideas and learned the craft from that much more advanced race. Then I seem to have had a glimmering of perception that might well have led further. I wrote:

"As a suggestion, it seems, at first glance, rather surprising that, with the long lines of finished gem-engraving among the Greeks of the South and the Etruscans of the North, the middle districts should have remained in a state of barbaric unproductiveness, but, on the other hand, we know that the races of these districts were, for the most part, rural folk, and they may have found it more convenient to buy the few gems they needed. It is, generally speaking, rather later that we find the characteristic Roman work, which, I may add, can be explained by the fact that the earliest signet devices of the Romans were cut in the metal of their rings."

I ought to have carried my reasoning a bit further and I trust I should have done so had I then seen as many of these stones as I now have. The Samnites, Aequians, Sabines, Marsi, Frentani, Picentes, and the rest were, indeed, largely rural peoples, far ruder and poorer than their neighbors of the North and South or even than those of the growing republic on the west coast. Likely enough some of the richer among them imported their signets—perhaps drill-work scarabs—but, doubtless, many men of more moderate means had need of such conveniences. Here, then, we find a hitherto vacant area into which these hitherto unsatisfactorily attributed gems fit with marvellous aptness.

The scarab at its worst meant considerable skill and cost in the shaping of the beetle. The convex forms of the South Italian ring-stones, as they had developed from the scarab and the scaraboid, were much simpler and more inexpensive, and the uniformly poor material is precisely suited to poorer folk. The workmanship, aptly enough, imitated the crudest, cheapest, and most easily copied style with which these peoples were familiar, that of the drill-work scarabs. Above all, the general choice of

animal subjects—a distinct divergence from Etruscan taste and only moderately in evidence among the southern Greeks or the Romans themselves—would seem to show clearly the preference of rural races. It is in the selection of signet subjects, whether they be imitative or original, that we find the truest guide to popular taste. That of simple, rural tribes would be apt to be original and characteristic, and they seem to be so most markedly in the case before us.

Altogether, this attribution of a class of gems as distinct in substance, form, workmanship, and subjects as any that exists seems to me in every way satisfactory and convincing. I have included a few illustrations, that the type may be noted. Once seen, it is unmistakable.

DUFFIELD OSBORNE.

NEW YORK.



STUDIES IN THE HISTORY AND TOPOGRAPHY OF  
LOCRI. I

DURING the months of July and August, 1914, I travelled on foot through the whole length of East and of West Locris, visiting by means of side excursions almost every known site of ancient habitation in that region, making topographical notes, and taking a number of photographs. Some of the inscriptions which I found in the course of these travels have already appeared in this JOURNAL (Vol. XIX, pp. 320 ff.). The present contributions upon moot points in the topography and history of Locris, East and West, based in the main upon my own observations, can be most conveniently arranged under the rubrics of the different localities, using the ancient name, if that be certainly ascertained, if not, the modern designation. The order is in general that in which I visited the localities in question.

LARYMNA

As to the location of Larymna proper there can be no question. The authoritative Greek sources are explicit enough,<sup>1</sup> and the modern name of the region (ἡ τοῦ Λάρυμναις) is conclusive. But whether there were two towns by this name, and, if so, what the relation of the second, or Upper Larymna, was to Lower Larymna, are difficult questions upon which no substantial agreement has been reached.<sup>2</sup> The solitary passage which expressly mentions

<sup>1</sup> Pliny (*N. H.*, IV, 27), to be sure, puts it in the northwestern portion of East Locris, beyond Daphnus. In his account Larymna (or as he calls it, "Larumna") properly should come in right after the clause "Locri . . . per quos amnis Cephisus defertur in mare" (obviously from the same source as Strabo's *ἡρεσίδες δ' ἄρα ἐκ Κηφισοῦς ἐκβάλλουσιν ἐπὶ τῇ θάλασσᾳ* [IX, 2, 18, p. 407]). But Pliny's geography of Greece is full of errors. For the date of his sources on Locris see below. Mela, II, 45, puts "Larumnae" between Anthedon and Aulis; but this is merely characteristic of his wretched compilation. Compare also note 2, p. 60, below.

<sup>2</sup> A detailed account of the earlier literature is given by De la Porte du Teil, *Eclairciss.* 15 on this passage of Strabo, in the Du Teil, Koraes, Gosselin, Letronne, *Géographie du Strabon*, II, 1805 ff. The discussion is carried further American Journal of Archaeology, Second Series. Journal of the  
Archaeological Institute of America, Vol. XX (1916) No. 1.

Upper Larymna is in Strabo, IX, 2, 18, p. 406: *εἴτα ἐξέρρηξεν (sc. ὁ Κηφισός) εἰς τὴν ἐπιφάνειαν κατὰ Λάρυμναν τῆς Λοκρίδος τὴν ἄνω· καὶ γὰρ ἑτέρα ἐστίν, ἧς <ἐμνήσθη>μεν, <ἡ> Βωιωτιακὴ, ἐπὶ τῇ θαλάττῃ, ἣ προσέθεσαν Ῥωμαῖοι τὴν ἄνω.* The text here is sound, the meaning clear: there was a Λάρυμνα ἡ ἄνω belonging to Locris, a Λάρυμνα ἡ ἐπὶ θαλάττῃ (or ἡ κάτω) belonging to Boeotia. It is of no use to object as Mannert<sup>1</sup> and Groskurd<sup>2</sup> do, that no other author, not even Strabo himself, though he speaks of Larymna elsewhere,<sup>3</sup> mentions this upper town; no one else had the slightest occasion to do so, with the possible exception of Pausanias,<sup>4</sup> and his silence may be very well explained. Either the place had wholly disappeared by his time,<sup>5</sup> or else Pausanias never visited Larymna at all, which is much more likely, and merely abbreviated some other account.<sup>6</sup>

The real difficulty is geographical. If we look for Upper Larymna in the valley of the *Revma*, the so-called Cephissus,<sup>7</sup>

by C. G. Groskurd, *Strabons Erdbeschreibung*, II, 1831, *ad loc.* All these purely philological disputations, before the era of travel and archaeology, have very little value now.

<sup>1</sup> *Geographie der Griechen und Römer*, VIII. Teil, Leipzig 1822, p. 220.

<sup>2</sup> *Op. cit.*, *ad loc.*

<sup>3</sup> IX, 2, 13, p. 405: *εἰσὶ μὲντοι καὶ προϊόντι μικρὸν πολίχνας δύο τῶν Βωιωτῶν, Λάρυμνά τε, παρ' ἧν ὁ Κηφισὸς ἐκδίδωσι.* Even in the passage (IX, 4, pp. 425 f.) where Strabo mentions other Locrian towns, but not Larymna, as Groskurd objects, he is really describing Locris and its towns as they were constituted in his own day. Upper Larymna may very well have ceased to exist, or at least to be noteworthy, by his time (see below).

<sup>4</sup> IX, 23, 4.

<sup>5</sup> So W. N. Ulrichs, *Reisen und Forschungen in Griechenland*, Bremen 1840, I, p. 230; C. Bursian, *Geographie von Griechenland*, Leipzig 1882, I, p. 193, 2; Hitzig and Blümner, *ad. loc.*; Girard, *De Locris Opuntiiis*, Paris 1881, p. 35.

<sup>6</sup> W. M. Leake, *Travels in Northern Greece*, London 1835, II, pp. 290 f., had given good reasons for doubting if Pausanias could have written as he did, had he actually made the journey from Acraephium to Larymna; and R. Heberdey, *Reisen des Pausanias in Griechenland*, Wien 1894, p. 102 and note 84, very plausibly ascribes the whole passage in Pausanias to a Periplus (on the use of which by Pausanias, cf. Kalkmann, *Pausanias der Perieget*, pp. 175 ff.). A. de Ridder even doubts whether Pausanias ever made the trip that he describes from Acraephium to Copae, which was supposed to include this trip to Larymna (*B.C.H.* XVIII, 1894, pp. 271, 2; 451), and I believe he is right. (See hereafter upon Cyrtone and Corsea.)

<sup>7</sup> On the proper relations of the Cephissus and the Melas to lake Copais, and their respective outlets, see A. Philippson, *Zeitschr. d. Ges. für Erdkunde zu Berlin*, XXIX, 1894, pp. 40 ff. Erroneous views of the ancients are there discussed.

above the lower town, then it is incredible that the harbor town should have been Boeotian at a time when the upper town was Locrian. Larymna as a harbor had practically no Locrian country as *hinterland*, as Ulrichs (*op. cit.*, p. 230) pertinently observes, and if Upper Larymna lay in Locrian hands, the port simply could not have been utilized by the Boeotians at all. And again, at a time when Boeotia was strong enough to seize and hold an ancient Locrian city, how could the Locrians have maintained themselves in a position which effectively blocked off the harbor from the Boeotian interior? Or, if the Boeotians controlled the route which ran from Lower Larymna by the modern sites Martino and Monachou to Copae, how could an insignificant Locrian enclave<sup>1</sup> have maintained itself, surrounded by Boeotians? That Upper Larymna might for a time have been Boeotian, while Lower Larymna was still Locrian, would be natural enough,<sup>2</sup> as Boeotia gradually encroached upon ancient Locris, but the converse is historically and topographically unthinkable. Two suggestions have been made to avoid this difficulty. Leake<sup>3</sup> thought that the modern Larmais (the district), or Kastri (the town), was the Locrian, or Upper Larymna, and that the Boeotian or Lower Larymna was to be sought for on the bay of Skroponeri. This is inadmissible for several reasons, even if one, with Leake, regard Strabo as having blundered badly. First, no remains have ever been found of any ancient town of any appreciable size on the bay of Skroponeri, nor from the character of the surrounding country is it likely that a seaport town ever existed there; yet the Boeotian Larymna was an important place. Second, as Leake himself admits,

<sup>1</sup> The foundations and lower courses of the walls of Upper Larymna (Bazaraki) are of less than ordinary strength, and the workmanship is inferior. As a natural stronghold, its situation was admirable; on a mountain spur, with a ravine on one side, gentler slopes on two other sides, and a depression on the east towards the mountain, and with powerful and perennial springs of water just outside the walls and dominated from them. But its fortifications could never have stood comparison with those of Lower Larymna, and it was clearly not intended for a fortress.

<sup>2</sup> In Ulrichs' time, of the three mills in the gorge, the uppermost belonged to the monastery of Palagia on Mt. Ptoon in Boeotia, the two lower to Martino, *op. cit.*, p. 227. Compare also K. G. Fiedler: *Reise*, etc., Leipzig 1840, I, p. 110. Pape-Benseler, s.v. Λάρυμνα, make the upper town Boeotian and the lower Locrian, flatly against the testimony of Strabo, and this is not the only palpable blunder in the article, which must have been cast together hurriedly.

<sup>3</sup> *Op. cit.*, pp. 290 f.

Upper Larymna soon disappeared, yet his "Upper Larymna" is the most considerable mass of ancient remains in all that part of Greece, while his "Lower Larymna" cannot be discovered at all.<sup>1</sup> Third, there is no conceivable reason why one Larymna should be called "Upper" and the other "Lower," if they were both on the seacoast, at exactly the same level, not even in the same valley, but separated from one another by a considerable mountain, and belonging to different tribes. Fourth, if anything at all is clear from Strabo, it is that Upper Larymna and the Anchoe were very close together, while the Anchoe (now Kephalaria) is fully three miles from Lower Larymna.<sup>2</sup>

H. Kiepert in the *Formae Orbis Antiqui*, XV (1894), identified Upper Larymna with the small ancient settlement near Martino.<sup>3</sup> This satisfies the requirement of the expression ἡ ἄνω, for it so happens that the two streams enter the gulf of Larymna at almost equal distances from the town, the so-called Cephissus to the south, and the other, a rather sizable torrent, to the north. Also it is quite conceivable that Lower Larymna might have been Boeotian while the village at Martino was Locrian, for, though Lower Larymna is the natural outlet for Martino (the whole region belonged to Martino, and was cultivated thence when Ulrichs passed through),<sup>4</sup> there is no difficulty in reaching the sea from this point by the route leading through Cheliadou and Proskyna. There are, however, very serious difficulties involved in Kiepert's conjecture. First, if you can accept anything about Strabo's account, it is that Upper Larymna was near the Anchoe and the outlet of the so-called Cephissus. Second, considerable remains of a town at just this site are actually in existence, and there is no other recorded town name which can, with any degree of plausibility, be assigned to them. Third, though Martino is actually in a valley that is literally "above" Larymna, nevertheless the Larymna valley could only have been that of the so-called Cephissus, its abundant flow of water driving the mills

<sup>1</sup> The only ruins on this bay are probably those of Phocae (Ptol., 3, 15, 9).

<sup>2</sup> Fraser, *Pausanias*, London, V (1898), pp. 106, 108. This agrees with my own pedometer record (July 7).

<sup>3</sup> It is due only to very imperfect geographical data that K. O. Müller, *Orchomenos* (ed. Schneidewin), in his two maps does the same thing. His locating Upper Larymna by the Anchoe is of course correct, and had he known that Martino lay on a quite different water course, he would certainly not have confused the two.

<sup>4</sup> *Op. cit.*, p. 227.

and irrigating the gardens and orchards of the town,<sup>1</sup> while this valley alone connected the harbor with the large and important towns of the interior for which it served as the most convenient outlet.<sup>2</sup>

We are forced, therefore, to the conclusion that the ruins at the gorge above the springs in the Revma at Bazaraki are Upper Larymna. Some final confirmation of this view may be seen in the modern designation, Apano-Larmá, as an alternative to Bazaraki, while the region below the narrows is called Kato-Larma (Ulrichs, *op. cit.*, p. 227). That there really was such a place as Upper Larymna the discovery of ruins precisely where Strabo locates it is conclusive evidence. They answer once and for all the hypercriticism of Mannert and Groskurd (*loc. cit.*), that Strabo had created a second Larymna in a vain attempt to reconcile sources which spoke now of a Locrian and again of a Boeotian town by that name. We may further note that the existence of two separate towns called Larymna has left its impress also in the distorted farrago of Pliny. In *N. H.*, IV, 27 (see p. 32, n. 1), mention is made of a Locrian *Larumna*; but in 26 the MSS. give: "Glissa, Copae, iuxta Cephisum amnem Lamiae et Anichiae," etc. Now it makes no difference whether we preserve the barbarous corruptions "Lamiae" and "Anichiae" (which Pliny may very possibly have actually written) with the most recent scholars (Detlefsen and Mayhoff), or emend

<sup>1</sup> Kambanis (*B.C.H.* XVII, 1893, p. 324) is certainly wrong in saying that the springs right at Bazaraki are the outflowing of water from the katavothras. The quantity of their flow has no relation to the level of the Copaic lake, as the natives long ago asserted (Ulrichs, *op. cit.*, p. 227) and as has been proved by the fact that the complete drainage of the lake has not affected these springs in the slightest, which flow now as copiously as ever. (Cf. also Frazer, *op. cit.*, p. 107.) Philippson (*op. cit.*, p. 50) speaks as though all the springs in the Larymna valley were fed from katavothras 4-7 of his list. But since the draining of the lake all these katavothras are dry, while the lower springs run as formerly. If they are connected with any katavothras of lake Copais, it must be Philippson's 1 and 2, near the former island Stroviki, for into these a branch of the never failing Melas has constantly flowed, or else they are connected with the swampy region about the head springs of the Melas.—On "katavothra" as the correct form of the singular (not katabothron, or katavothron as it is frequently given, e. g., by the *International* and the *New Standard*) one might compare Kyriakides, *Modern Greek-English Dictionary*, s. v. *Καταβόθρα*, and Philippson, *op. cit.*, p. 45, 2.

<sup>2</sup> Richard Kiepert in the *Formae Orbis Antiqui*, XIV (1906), and the accompanying text, p. 2, very properly places Upper Larymna at Bazaraki, in accord with most geographers.

with Barbarus and Harduin to "Larymna" and "Anchoa," there can be no question that these last mentioned places are meant.<sup>1</sup> Regarding Larymna (of course Anchoe was not a city) Pliny was, unwittingly enough, no doubt, in essence correct.<sup>2</sup>

The statement of Strabo, however, that Upper Larymna was Locrian at a time when Lower Larymna was Boeotian, we have seen cannot be accepted. Can it be explained as anything but a gross error? I think it can. But first we must refute a well meant but unsuccessful attempt to explain away the difficulty. Ulrichs (*op. cit.*, p. 230) conjectured that the older Larymna was near the Anchoe and that its *ἐκ νέου* later grew to such importance (but only after the Boeotian occupation) that the older Locrian settlement was first overshadowed, and later wholly absorbed. This view has been accepted by Bursian (*loc. cit.*), and Wm. Smith (*Dictionary of Greek and Roman Geography*, s.v. *Larymna*), but there are fatal objections to it. In the first place there is nothing at all ancient about the ruins of Upper Larymna. The city walls are all of squared stone, sometimes only roughly hewn, but as such only evidence of careless work, not of antiquity.<sup>3</sup> The only suggestion of polygonal work is in some interior terrace walls (so also Lolling) and these are unquestionably late. The pottery fragments which are plentiful are all relatively late, and the only known inscription from the site (published in this JOURNAL, 1915, pp. 320 f.) belongs to Roman times. Precisely the opposite is the case at Lower Larymna. Here notable remains of a rough polygonal city wall of an ancient order exist, especially to the northeast beside the little harbor, where a stretch of nearly 100 metres still stands at some places as much as 2.5 m. in height, and averaging about 4.5 m. in thickness.<sup>4</sup> Frazer (*loc. cit.*, p. 108) noticed this wall, but felt uncertain as to its date. He was

<sup>1</sup> Groskurd, *loc. cit.*; Hirschfeld, Pauly-Wiss., I, 2111, 10 f.

<sup>2</sup> It is singular that neither *Anchoa* nor *Anichiae* appears in the *Thesaurus*. Perin's new *Onomasticon* does better, although it cites only *Anchoa* and refers merely to Leake's antiquated discussion.

<sup>3</sup> This I can assert from a careful examination of them myself. So also Lolling in Baedeker<sup>4</sup>, p. 186 (Engl. Ed.), and Hitzig-Blümner (*loc. cit.*); cf. also Frazer, *op. cit.*, p. 110.

<sup>4</sup> Noack, *loc. cit.*, p. 450. Ulrichs, *op. cit.*, p. 231, had noted the existence of this large polygonal wall and assigned it quite properly to an earlier epoch than the other fortifications. Precisely the same condition exists at the neighboring and closely related Halae. There the excavators, Miss Walker and Miss Goldman, found very considerable remains of a polygonal wall, dating from the sixth century or earlier. See this JOURNAL, 1915, pp. 432 ff.



inclined to ascribe both it and a semicircular tower inside a rectangular one on the northeast of the town "to a later repair." This view is quite inadmissible. At what period of "later repair," that is, long after the fine ashlar masonry of the fourth (or possibly fifth or third) century, did men erect massive walls of rough-hewn cyclopean masonry more than 4 m. in thickness, and that too at a point where there was the very least chance or likelihood of the older walls being injured, *i.e.*, on the inner or protected side of the small harbor, and where there is no indication that walls of ashlar masonry ever existed? Furthermore such later repairers were not particular about materials used, yet the singular feature of these polygonal walls is that they



FIGURE 1.—LARYMNA. CYCLOPEAN WALL BY THE INNER HARBOR

are uniformly constructed of white limestone, while the ashlar masonry walls are of a markedly red stone, as Mr. Frazer himself noticed; why should the repairers have gone to the trouble of working new quarries and have utterly rejected any fragments even of the hypothetically older walls which they were supposed to be repairing? On the other hand, the builders of the ashlar masonry walls were compelled to use for the most part freshly quarried stone, as few of the white limestone blocks, if properly squared, would have been large enough for their purposes, yet they did use them occasionally, as here and there a white stone appears in the red. As for the tower southeast of the mole, of "fine ashlar masonry," which Mr. Frazer supposes to have "been



replaced by a semi-circular tower of polygonal masonry built of small stones with gaping joints," I should suggest that precisely the opposite of Mr. Frazer's suggestion is the case. The earlier, rather rude polygonal tower of uniformly white limestone, has been encased in a rectangular tower of ashlar masonry. When the new walls were erected the builders, finding this tower in a fair state of preservation, although not strong enough for their purposes, simply used it as a support for the casing of rectangular blocks in the new square tower. In this way it was preserved

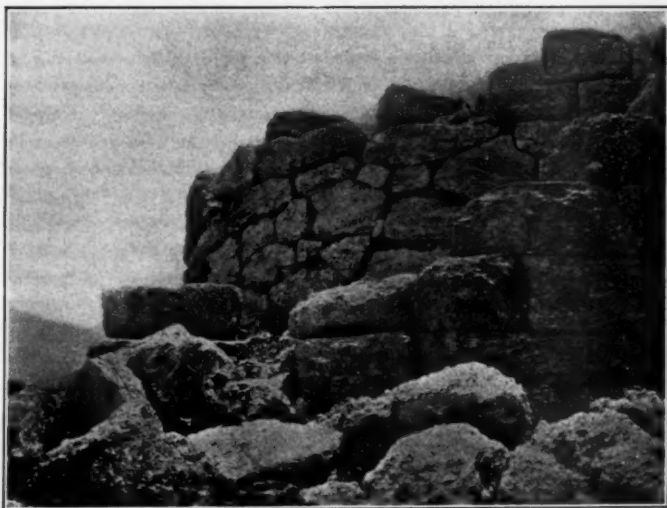


FIGURE 2.—LARYMNA. TOWER ON THE NORTHEAST BY THE OUTER HARBOR

when the much better laid wall finally succumbed to the elements. How otherwise, one may well ask, could a loosely built wall of this sort have survived say fifteen centuries or more, when a much more powerfully built wall, according to Mr. Frazer's theory, fell into decay in a fraction of that time? Finally, if the loosely built wall were a repair, how are we to account for the singular action of the builders who carefully eschewed the fine squared blocks of red limestone lying all about them, as they still are today, and went to the trouble of bringing in smaller and only roughly fashioned stones of a different quarry for a more

difficult piece of construction? The illustrations (Figs. 1 and 2) of the two portions of the wall, which are from my own photographs, will, perhaps, make my argument clearer. They will also show that the semicircular tower belongs probably to a little later period than the long stretch of cyclopean wall beside the little harbor.

All this discussion has the most important bearing on the history of Larymna. These rough polygonal walls prove conclusively that Larymna was a strongly fortified, and hence important, seaport in very early, probably Mycenaean times.<sup>1</sup> Obviously

<sup>1</sup> Another evidence of early settlement is the proto-Corinthian pottery found at Larymna. Cf. Noack, *loc. cit.* A. de Ridder in an exceedingly captious criticism of Noack's work (*B.C.H.* XVIII, 1894, pp. 446 ff., esp. p. 451) denies that the Minyan civilization had any contact with the sea; he asserts that the Minyans were utterly engrossed in agriculture, and thinks that the fortifications on the hills between the Copaic lake and the coast were intended to protect the plain from the sea. So far as I know typical "Mycenaean" pottery has not been found either at Anthedon or at Larymna, but no excavations have been carried on at either place, and the oldest fortifications at both sites are very likely from the later Mycenaean period. Particularly the fortification of such low lying sites rather than rocky hill tops is characteristic of Minoan or Mycenaean civilization in contrast with archaic Greek (cf. Noack, *op. cit.*, p. 439). As for de Ridder's notion regarding the hill forts, one might observe that pirates never could have penetrated as far inland as Orchomenus, nor, if they did, would such hill forts have been any real hindrance to them, as the low mountains are everywhere traversable for such men. The only good reason for their construction would be to afford safety to commercial highways from the occasional depredations of mountain brigands. But the less said about this fantastic notion, perhaps, the better, since even Wilamowitz has admitted (on new inscriptional evidence) that Orchomenus as a member of the Calaurian Amphictiony was a sea power in control of the Northern Boeotian coast, Anthedon, and, we must add, Larymna, through the seventh, and probably well into the sixth century B.C. See his 'Die Amphiktionie von Kalaurea,' *Nachr. der. Gött. Ges. d. Wiss.*, 1896, pp. 158 ff., esp. 167. His results are completely accepted by Ed. Meyer, *Hellenika*, p. 101, 2, and Beloch, *Gr. Gesch.*, I, pp. 208 f., 330. Beloch (p. 209) calls the trade route with the sea the "Lebensnerv" of Orchomenus.—It is strange that in noting the control which Orchomenus must have had over a harbor, Wilamowitz thought only of Anthedon, quite neglecting the much better, and more naturally connected harbor, Larymna (at the mouth of the so-called Cephissus), with the shorter haul, and the far more favorable terrain, and hence better roadway. Of course, if one were prepared to accept the view of A. Boeckh (*Abh. d. Berl. Akad.* 1836, pp. 41 ff. = *Kl. Schr.*, I, pp. 1 ff.) and E. Curtius (*Sitzungsber. d. Berl. Akad.* 1842, pp. 1181 ff.) that the Minyans, akin to the Tyrrhenians, came by sea to Boeotia (which, in view of the increasing favor with which the overseas origin of the Etruscans is now regarded, is not at all impossible), the question were completely settled. Larymna would then have been just a station in

not for the Locrians, but only for the "Minyans" of Orchomenus and the region of the Copaic Lake. A glance at the map shows that Larymna is the only convenient outlet to the sea, and to these seafaring Minyans of Orchomenus the earliest occupation of Lower Larymna as a harbor must be ascribed. All this is obvious, and attention has been called to it more than once,<sup>1</sup> but as Leake, Ulrichs, Smith, Bursian, Frazer, de Ridder, and others have disregarded it, I shall try to add some further evidence, and to point out the bearing of these facts upon the history of this special region and of the Locrians in general.

The great engineering works for draining the Copaic Lake must have compelled the Minyans to ensure a safe outlet for the large part of the waters of the lake which escaped by way of the Larymna valley, for the dangers of any stopping up of the exits were so great and the effect so immediate (compare the Theban Hercules legend), that it was a vital matter to control all outlets which might be interfered with.<sup>2</sup> This cause alone would have made the Minyans control the Larymna valley, even were a haven not necessary.

Again, between Upper Larymna and the sea an ancient road, some distance above the present way, passes for some 300 m. over an outcrop of very hard limestone, in which the fissures have been filled up with small stones. The great antiquity of this road and its very considerable use are shown by the extremely deep ruts (measuring 1.55 m. from centre to centre), which can be traced for the greater part of this distance. At some places, despite the weathering of nearly two thousand years, they are

their advance to the interior, and must always have been held in order to maintain relations with their original element and connections. It is better, however, not to use this theory for argument until more objective evidence can be adduced in support of it. Nevertheless Curtius (*op. cit.*, p. 188) is quite right in insisting that the Minyans are everywhere and constantly regarded as a folk of seafarers. See also Philippson, *op. cit.*, pp. 54 ff., on the Minyans, their origin and relation to Thebes and the seacoast.

<sup>1</sup> As e.g. by K. O. Müller, *op. cit.*, p. 207; H. Kiepert, *Lehrb. d. alten Geographie*, Berlin, 1878, pp. 285, 289; Lolling, *Hellen. Landeskunde* (Müller's *Hdbch.*), p. 133; *Baedeker* (Engl. ed.), pp. 186, 190; E. Meyer, *Gesch. d. Alt.*, II, p. 193; and Noack, *loc. cit.*

<sup>2</sup> Cf. M. L. Kambanis, *B.C.H.* XVII, 1893, pp. 334 ff.; Noack, *op. cit.*, p. 450. On the causes and consequences of such stoppages, and the probable historical element in the Hercules legend, see Philippson, *op. cit.*, pp. 54 ff.

still 16 to 18 in. deep.<sup>1</sup> Now we are compelled, I think, to ascribe these ruts in large part, at least, to the traffic wagons of the Minyans during the many centuries of their domination at Orchomenus. After the rise of Thebes the towns of the Copaic Lake dwindled to complete insignificance, and even though the Thebans at a late date made Larymna a naval base, and fortified it strongly, the main lines of sea trade for central and southern Boeotia lay farther to the south and east. Nothing but the ancient and long enduring commerce of the Minyans can explain

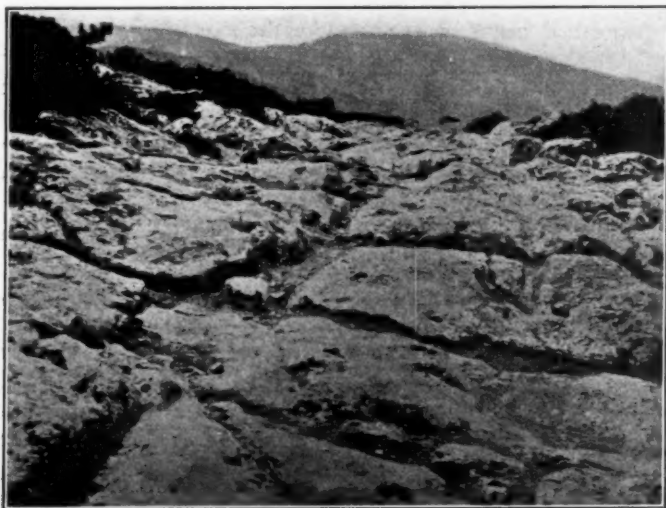


FIGURE 3.—RUTS IN THE ROAD BETWEEN UPPER AND LOWER LARYMNA

the wearing of such extremely deep ruts in hard stone, for after the sixth century B.C., that is after the complete decline of Orchomenian power, the trade of this harbor must have been quite inconsiderable. Some indication possibly of the repute of Larymna of the ancient days may be gathered from Promathidas (*apud* Athen., 296b), who represents Glaucus, the famous sea god of Anthedon, to have been the son of

<sup>1</sup> See the accompanying illustration, No. 3, from my own photograph. These ruts are noticed briefly by Lolling, *Baedeker*<sup>4</sup> (Engl. ed.), p. 186, but by no one else to my knowledge.

Polybus, the son of Hermes, and of Euboea, the daughter of Larymnus. This setting of Larymnus back of both Euboea and Glaucus, the two greatest names of that region, is scarcely conceivable except on the supposition that some faint memory yet remained in the days of Promathidas (even if one could prove that he is not merely following an ancient tradition) of the early importance of the town. Locrian rationalizing genealogy, on the other hand, gives Larymnus a much more humble rating (see below, p. 47).

This Minyan, pre-Locrian, occupation of Larymnus finds confirmation in another quarter. Despite the fact that Lycophron and the geographers regularly assign Larymnus to Locris, it is not mentioned in the Homeric Catalogue, nor in fact are the other Locrian settlements of the Aetolimi<sup>1</sup> peninsula, Halae or Corsea. On the other hand, the Locrian villages to the north-west, especially between Thermopylae and Cynus are so elaborately enumerated, considering their utter insignificance, that it was a puzzle for later geographers to identify all the names with known sites.<sup>2</sup> Therefore the failure to mention any towns in what was nearly one third of later Locris, despite a marked readiness to notice the most insignificant settlements in the rest of the country, makes it well nigh certain that for the author of the Catalogue the Aetolimi peninsula was no part of Locris; nor was it any longer Orchomenian, for to him Copae is already Boeotian, i.e., Theban, and Larymnus must have been cut off completely from Orchomenus.<sup>3</sup> The towns of the Aetolimi peninsula are

<sup>1</sup> This is the local pronunciation which I heard. The Austrian map gives "Aetolima"; T. G. Skuphos, *Zeitschr. d. Ges. f. Erdkunde zu Berlin* 29 (1894), p. 415 "Aetolyma"; A. Philippson in the same volume of the same journal, pp. 8 and on the accompanying map, and A. Bittner, *Denkschr. d. K. Akad. d. Wiss., Math.-Naturwiss. Kl.*, XL, Wien, 1880, p. 3, "Aetolimas"; S. A. Papavasiliou, *C. R. de l'Acad. de Sci.*, Paris, 1894, p. 114, "Aetolymion."

<sup>2</sup> For example, East Locris has eight town names and a "river," the trifling Boagrius, exactly the same number as Phocis (!) whose principal stream, the Cephissus, a real river, is also mentioned. Boeotia is generally regarded as faring especially well in the Catalogue, yet for the whole country, including Orchomenus and Aspledon, but thirty-one place names appear, and no river or lake, numerically a smaller proportion than that of East Locris (e.g., Kiepert, *F.O.A.*, XV, gives ca. 48 town names in Boeotia against only 10 in Locris west of the Aetolimi peninsula), and from the view point of relative importance, an absurdly disproportionate number.

<sup>3</sup> When the Catalogue was written, the struggle between Thebes and Orchomenus had advanced so far that even Copae had been wrested from the latter. See Beloch, *Gr. Gesch.*, 1, p. 203, 3. With Copae Boeotian (i.e.,

therefore thus caught at a period when they were no longer Minyan, nor yet Locrian, and not of sufficient importance in themselves to warrant detailed mention. And yet it may be that the principal town of the district, Larymna, is not entirely overlooked in the Catalogue. As an Orchomenian dependency it might very easily have been omitted, since Orchomenus itself is barely mentioned and is notoriously slighted in the Homeric epic, and at just this period when the latter was declining rapidly before the advancing power of Thebes, Larymna was probably



FIGURE 4.—LARYMNA. THE INNER HARBOR

a place of very little consequence. But I venture to suggest, nevertheless, that Larymna appears in the form of Nisa in verse 508. The strenuous efforts of the interpreters to emend or explain this statement which they could not understand, are preserved in the Scholia and in the *apparatus criticus* of the Theban), Orchomenus must have lost all touch with Larymna. Doubtless long before Copae was actually conquered the trade route must have been abandoned owing to the hazards of warfare, and Larymna may have been, therefore, after the passing of its ancient importance, and before the complete establishment of the Locrians, that is, during the time of the poet of the Catalogue, a spot so insignificant as to be omitted without compunctions.



larger editions. That Nisa = Nisaea = Megara (as though there were ever any good reason for making the Megarid a part of Boeotia) is a counsel born surely of desperation. How much more natural to understand it as an early name for Larymna. This latter place had been part of Orchomenian territory, the *ἐπίγειον* or *ἐμπόριον* of the great city by the lake, and the grouping with other names surely suggests Larymna. Arne and Mideia, which immediately precede, have, to be sure, never been located to all men's satisfaction, but Strabo's statement that they were in the basin of the Copaic Lake is after all by far the most plausible explanation. Anthedon, which immediately follows, is the very nearest seaport, and if Nisa be Larymna, one has a most natural group of four closely connected cities of northeastern Boeotia.<sup>1</sup>

However, Nisa may or may not have been Larymna; at all events important inferences for early Locrian history have been secured. Since Larymna was the harbor of Orchomenus, and that city did not succumb to Thebes until the seventh century B.C., or the early part of the sixth (see above, p. 40, n. 1), then Locrian domination in the Aëtolimni peninsula cannot be much anterior to the year 600 B.C. In the chaos that attended the collapse of the Orchomenian hegemony, when the great engineering works of the Copaic Lake were suffered to fall into permanent decay, the hold upon the distant seaport must have been completely relaxed. It was then for the first time possible for the Locrians, who had established themselves firmly at numerous points to the north and west, to expand yet further and to occupy the feeble towns of this peninsula. For it is simply unthinkable that a strong power in northern Boeotia would allow itself to be cut off from its only natural seaport by a relatively feeble folk like the East Locrians. And indeed, when Thebes some centuries later came to dominate completely the north as well as the south and centre of the land, her statesmen proceeded at once to occupy the ancient outlet of the north shore of the lake.

That the Locrians came from the northwest originally there can be no doubt, and that there was some pressure from that

<sup>1</sup> Jardé, *B.C.H.* XXVI, 1903, p. 331, Hirschfeld, *Pauly-Wiss.*, I, col. 2360, and Miss Walker and Miss Goldman, *op. cit.*, p. 420, wrongly follow Strabo in interpreting *ἐσχατώνας* of Anthedon (B 508) as proving that for Homer Larymna was a Locrian town. The adjective means no more than that Anthedon was on the limits of the land, as indeed it was, being on the sea-coast.

quarter already before the fall of Orchomenus appears probable from the existence of a singular wall of large polygonal blocks which extended from the sea to the cliffs at the narrows between the bay of Opus and the mountain (now called Veles).<sup>1</sup> Of course walls at narrow passes in Greece always looked to the north and not the south.<sup>2</sup> This wall must therefore have been intended to keep out invaders from the northwest (*i.e.*, the Locrians, for other invaders of central Greece always crossed into the plain of Phocis long before reaching this point) out of the Aetolimni peninsula, *i.e.*, away from the port of Larymna.

The final consequences are, therefore, that the Locrians were pushing down the coast before the complete decay of Orchomenus, but did not reach their full extension in historical times until after the year 600 B.C. or thereabouts. They were not, therefore, as has been supposed, a very ancient stock, who were one time spread far and wide from the Gulf of Malis to that of Corinth, and later torn asunder and driven to mountain valleys and a narrow coast line by invaders who forced their way in by the valley of the Cephissus,<sup>3</sup> but the Locrians of the East and West are clearly only two separated tribes, like the half tribes of Manassah, moving down from Pindus (dialectically they belong to the

<sup>1</sup> Cf. Körte, *Ath. Mitt.* IV, 1879, p. 271, 2, who, however, thinks this wall dates from the time of Epaminondas (see below). That the Boeotians at this time should have erected a large polygonal wall seems to me quite impossible. In the fourth century the Locrians were feeble and passive enough, and besides always to be found on the side of Boeotia anyway. Fortifications at this point in the fourth century can have no meaning. Thebes was campaigning frequently enough in the north but always successfully, and on the offensive. Thessalians or Phocians would have used any number of other passages. Compare also the remarks of Miss Walker and Miss Goldman, *op. cit.* p. 421.—I did not myself see this wall, nor have other recent travelers in this region, but there is no reason to doubt its former existence. The earthquakes of 1894 wrought great havoc at this precise spot, and a considerable tract of land sank below the level of the sea. The remains of this old polygonal wall very likely perished then, or in the necessary reconstruction of roads and retaining walls. On the effects of the earthquake here, see Th. G. Skuphos, *Zeitschr. d. Ges. f. Erdkunde zu Berlin*, 29 (1894), pp. 425, 438, 441, 445, 452, 455; C. Mitzopoulos, *Petermann's Mittheil.*, 40 (1894), pp. 224 f.; S. A. Papavasiliou, *C. R. de l'Acad. des Sci.*, Paris, 1894, p. 114.

<sup>2</sup> As the walls at Tempe, Thermopylae, and the Isthmus.

<sup>3</sup> As many have supposed, *e.g.*, B. G. Niebuhr, *Lect. on Ancient Ethnography*, I, p. 123; H. Kiepert, *Lehrb. d. alt. Geogr.*, p. 228; H. F. Tozer, *Lectures on the Geography of Greece*, p. 225; Wilamowitz, *Hermes*, XXI, 1886, pp. 108 f.; J. B. Bury, *J.H.S.* XV, 1895, p. 229; W. Aly, *Philologus*, LXVIII, 1909, p. 440; R. W. Macan on *Hdt.* VII, 176.

northwest Greek tribes), who divided at the mountain mass of Oeta, some heading southwards to the Gulf of Corinth, others eastwards by the Gulfs of Malis and Euboea.<sup>1</sup> They came probably in small numbers to the east, as their numerical feebleness at all times and the highly aristocratic organization of their state would signify. They found an old settled population, which seems to have been called, or identified with, the Leleges, and with whose legends they interwove in part their own.<sup>2</sup>

In concluding these historical inferences, I may point out that the Locrians had apparently a sound tradition regarding their own relatively late occupation of Larymna. Pausanias (IX, 23, 4) tells us that Larymna received its name from a daughter of Cynus. Now as I have elsewhere observed (*Philol.*, LXVII, 1908, pp. 440 ff.) this archaeological and rationalistic mythology of Locris is not without considerable elements of historical truth. Cynus is made a son of Opus, as being the eponym of the principal harbor of the metropolis. Larymna is the daughter of Cynus, partly because the place was regarded as a harbor of secondary importance, and partly, no doubt, because its occupation was secured at a later date—for the Locrian genealogical table shows evidence of regarding genuine chronological sequence.<sup>3</sup>

Finally we may note a faint echo of a tradition which represented the oldest Locrian settlements of the east coast as being near Thermopylae. Stephanus Byz., s.v. Ἀλπεινοὶ remarks ἔστι καὶ μητρόπολις Λοκρῶν. Now Alpenoi, or Alponos (the better attested form), was in historical times an utterly insignificant village, mentioned only incidentally by Herodotus and

<sup>1</sup> Compare Beloch, *Gr. Gesch.*,<sup>2</sup> I, 1, 89.

<sup>2</sup> There is not the slightest evidence that the Locrians ever spread from sea to sea across what was later Phocis. Not a trace of Locrian legend or of characteristic names or cults appears in the whole region. The name Opus of a promontory in South Phocis (*C.I.L.* III, 567 and *Addit.* XVI, p. 987, 21), as well as of towns in Achaea and Elis, may have been brought by various northwest Greek tribes from their earlier home (for that Locrians and Epeans were closely connected there can be little doubt), or else the name is pre-Locrian, -Phocian, or -Epean, as the case may be, for no satisfactory etymology has as yet been proposed. But these investigations, as well as any discussion of the Leleges, would lead us too far afield for the present study.

<sup>3</sup> Thus Physkos, as the eponym of the Physkeis (an obsolete tribal designation), is very plausibly made the predecessor of Locrus, as he in turn the father of Opus (the tribe is always older than the city which it founds after the migration). Cf. the discussion referred to above.

Aeschines in accounts of battles at Thermopylae, and never thenceforward (except rarely in inscriptions and, of course, by Stephanus). Its rôle as *μητρόπολις* could be due only to a tradition regarding the earliest settlement of the land, as in the historical period it was quite overshadowed by Opus. Furthermore the early prominence of Thronium in Locrian legends (see below), and its inconsequence in historical times, substantiates the view that the Locrians were settled for a considerable time, principally, if not exclusively, in the region between Oeta and Cnemis, *i.e.*, in the extreme western portion of the region they later occupied.

We are now prepared to consider more closely Strabo's statement about Upper Larymna: ἦ (*i.e.*, Lower Larymna) προσέθεσαν Ῥωμαῖοι τὴν ἄνω. What do the words mean? Du Theil and Koraes, supplying in thought some such word as *ὄνομα* translated: "surnommée par les Romains, la haute."<sup>1</sup> There are several objections to this. (1) Such a use of *προστίθημι* alone is unparalleled. (2) What did the Romans care about trifling distinctions in the names of towns and suburbs? The natives would have had a thousand occasions to differentiate for one that the Romans could ever have. (3) It makes arrant nonsense of the passage, attributing a statement regarding the upper town to the lower; for in essence the text means if interpreted in this fashion: "There is an Upper Larymna to be distinguished from a Larymna on the seashore which the Romans surnamed Upper Larymna" (!)

Groskurd translates it "welchem die Römer das obere einverleibten," which is the understanding of Leake and others.<sup>2</sup>

<sup>1</sup> Possibly they had in mind such a phrase as *ἔκγον προσετίθει πρὸς τοῦνομα* (Aristoph., *Clouds*, 63), or *ὅτε ἐκείνη τὸ τοῦ πολεμίου ὄνομα προσέθεσαν* (Dio Cassius, 78, 18), but it is difficult to conceive how the word *ὄνομα* or the like could be omitted.

<sup>2</sup> *Op. cit.*, p. 291, "soon after it (*i.e.*, Upper Larymna) had been annexed by the Romans to Lower Larymna." So Ulrichs, *op. cit.*, p. 230, "Die Römer mochten zuletzt Ober-Larymna ganz aufheben und die Bewohner veranlassen, sich in Unter-Larymna niederzulassen."; also Dr. Smith, *op. cit.*; Frazer, *op. cit.*, p. 109. K. O. Müller, *Orchomenos* (ed. Schneidewin), p. 50, paraphrases Strabo thus: "erst die Römer vereinigten wieder, wie so von Anfang an gewesen sein mag, Ober- und Unter-Larymna in eine Stadt."; cf. also p. 473. In this same place Müller conjectures that both Upper and Lower Larymna were originally Opuntian, then, as Thebes became powerful, Lower Larymna came into its hands, only to become Locrian again "nach Thebens Fall," and gives a new turn to the same Strabo passage by paraphrasing it: "die Römer

This is not, like the preceding, a contradiction in terms, but is nevertheless unsatisfactory. In the first place, no plausible reason has been suggested for such a strange action on the part of the Romans. Granted that Lower Larymna was a better location for commercial purposes (as Ulrichs properly observes), why should the Romans greatly care if a few people were willing to inconvenience themselves by living two miles away from this harbor? In the second place, is this a natural meaning for *προστίθῃμι*, i.e., "unite"? The word properly means "to add," for which it is the technical word as opposed to "subtract"—e.g., *ἵνα μὴ τι...προσθῇς ἢ ἀφέλῃς* (Plato, *Phaedo*, 95 E); *οὔτε ἀφελῆν ἔστιν οὔτε προσθεῖναι αὐτοῖς* (Arist., *Eth.*, II, 6, 9 [1106 b10]), etc. I have examined all the Lexica, and find no passage quite parallel to the meaning required here. "Unite" has many Greek equivalents, but I do not find *προστίθῃμι* among them. That is not to say that it might not be so used upon occasion, as negative proof is very hard to procure, especially in the present state of Greek lexicography, but I do not believe it to be the proper or natural meaning in such a context as this. The words ought to mean—"Larymna by the sea, to which the Romans added Upper Larymna," i.e., as a new foundation. This is simple, and quite natural and proper. "The Romans" in this case can be none other than Sulla. When he visited that blind fury upon the seaports of Boeotia of which even he himself seems to have repented later, he destroyed Larymna.<sup>1</sup> His purpose was clearly *schlugen beide* (i.e., Upper and Lower Larymna) *zu Böotien*." This last is so indefensible that it is fair to regard it as a mere *lapsus memoriae*. Girard, *op. cit.*, p. 35, is partly right in paraphrasing "*quae condita fuerat a Romanis*," but he neither explains the exact statement of Strabo, nor does he take notice of the controversy involved.

<sup>1</sup> He destroyed Halae and Anthedon at the same time, the autumn of 86 B.C. (Plut., *Sulla*, 26). The second army of Mithridates must certainly have used these ports to land their troops in northern Boeotia, and it was natural that to these same points the remnants of the defeated troops should have made their way. Apart from the vengeance which such a man might naturally take on these wretched towns for yielding to the Pontic king (cf. Drumann<sup>2</sup>, II, p. 383), Sulla had already suffered so much in all his operations from the fact that his opponent had command of the sea (and especially in the second Boeotian campaign which had been made possible only thereby), that he must have decided thenceforward to leave no more safe or fortified harbors along this coast for the enemy to use as a base of operations. As for the little village of Halae, Sulla made no arrangement for any rehabilitation, but allowed it later as a *fait accompli* (Plut.). For the more important town of Larymna some special provision of a change of location was natural, if not actually necessary.

to ruin the harbor towns of the northern coast and to damage Boeotia, to whose principal town, Thebes, he had already dealt a blow from which it never recovered. Learning that the region had at one time belonged to Locris, he may very naturally have decided to give it back to its earlier owners,<sup>1</sup> but in his desire to make certain that the Boeotians would not use it again as a harbor, or the Orientals as a base of operations, he must have done two other things: (1) he moved the city two miles back from the coast to a spot which was yet well adapted to manage the cultivation of both the upper and the lower valleys, and (2), he gave the new town a situation admirably adapted to defense, and completely blocking off all direct access to the harbor. It is plain that the new community was intended to have as little commerce as possible, and all that to pass inevitably through the hands of the Locrians, who were put in a strong strategical position to block the way leading to Boeotia and to command both valleys. And with this interpretation the archaeological evidence completely agrees. Upper Larymna was not settled at an early date, nor was it a long time inhabited. The walls are hastily built and now in utter ruins down to the very foundations.<sup>2</sup> Of course in a short time the superior commercial advantages of the harbor location drew men back to it, and under the *pax Romana* there was no longer danger of encroachment. We have reason to think, indeed, that Larymna became Boeotian again;<sup>3</sup> Strabo (IX, 4, pp. 425 f.), in the description of Locris as constituted in his own time, fails to mention any city of the Aëtolimni peninsula as Locrian. Of course he may be merely following an older source, but, it seems more likely that when the fury of Sulla had passed by, the long established claims of Boeotia were restored.<sup>4</sup>

<sup>1</sup> This would be in line with his treatment of Thebes, from which he took away half of her territory (Appian, *Mithrid.*, 54; Plutarch, *Sulla*, 12 and 19; Pausanias, IX, 8, 5.) Orchomenus and Alalcomenae also suffered.

<sup>2</sup> Nor is there any evidence that this town, like so many others, was used as a quarry by later settlements. There are none of any kind nearer than two miles away, and at that place there was more than enough hewn stone already at hand. The settlement here was certainly neither strong nor lasting.

<sup>3</sup> Precisely as "the Romans" rescinded Sulla's confiscation of Theban territory (Pausanias, IX, 7, 6).

<sup>4</sup> If any confidence is to be put in the report of Pausanias (IX, 24, 5), according to which Corsea and Halae were still Boeotian in his time, as is generally done (even by Beloch, *Gr. Gesch.*, III, 2, p. 359), it is quite possible that the conditions which had prevailed for a long time before Sulla were restored soon after his departure, or death.



However, as Locris, Boeotia, and Phocis were soon united in a *κοινόν*, that made no difference at all from commercial grounds, and, besides, the economic decline of this whole region rendered meaningless any quarreling over a harbor that was being used less and less.

After the first occupation by the Locrians, Larymna remained in their hands for several centuries. This is indicated by the genealogical relations referred to above, and the way in which Lycophron (*Alex.*, 1146) and others refer to it. Pausanias (IX, 23, 7) states: *καὶ συνετέλει δὲ ἐς Ὀποῦντα ἡ Λάρυμνα τὸ ἀρχαῖον. Θηβαίων δὲ ἐπὶ μέγα ἰσχύος προελθόντων, τηρικὰντα ἐκονσίως μετεράξαντο ἐς Βοιωτοῖς.* The only natural meaning of these words is in reference to Theban hegemony under Epaminondas in the fourth century.<sup>1</sup> It is true that at a later date than ca. 364 B.C.<sup>2</sup> Larymna is represented as being Locrian, so by Pseudo-Scylax, *Peripl.* 60, and this work is commonly dated about 347 (Unger), or shortly after 337 (Müller); in any event a considerable length of time after the decline of Boeotia, and the loss of many possessions, one of which, Larymna, as the naval policy was certainly a recognized failure, we may plausibly conjecture was, doubtless without resistance, allowed to revert to its former local allegiance, under pressure from the rest of the tribe doubtless, as the men of Larymna themselves must have seen that their economic interests would be better served by a union with Boeotia. The remark of Pausanias that their action was voluntary is therefore extremely plausible. I should be inclined to assign the beautiful ashlar masonry walls of reddish limestone at Larymna to the ambitious

<sup>1</sup> So taken by Ed. Meyer, *Gesch. d. Alt.*, V, p. 461; G. Körte, *loc. cit.* It seems hardly proper to dismiss the explicit statement of Pausanias as Pomtow, *Neue Jahrb.*, CLV, 1897, p. 795, does: "Pausanias . . . der wieder eigne falsche Hypothesen mit dem Tone völliger Sicherheit vorträgt," and Beloch, *Gr. Gesch.*, III, 2, 360. That Larymna was Locrian again in 273 B.C. surely proves nothing in view of the extremely complicated and shifting relations of Locris to surrounding powers. At different times from the fifth to the second century Opus itself was Athenian, Boeotian, Phocian, Aetolian, Macedonian, and independent, and with some of these states connections were made and broken more than once. In the century that elapsed from the naval policy of Epaminondas to the date of the inscription at Delphi, there were plenty of opportunities for Larymna to become Locrian once more, notably after the dissolution of the Boeotian league and the destruction of Thebes by Alexander, if not shortly after the death of Epaminondas, as suggested later in the text.

<sup>2</sup> Epaminondas seems actually to have taken to the sea in this year. Considerable work on the harbors of Boeotia must, of course, have preceded.

designs of Epaminondas, whose naval program called for such care and effort, and the work itself would fall best in this age.<sup>1</sup> The later restoration of Thebes under Cassander, while it might have enlarged the territory of the state, had no such interest in powerful harbor fortification works as did the period of Epaminondas. There is, however, no evidence of which I am aware that Larymna was incorporated in Boeotia again by Cassander. The only certain bit of evidence, a Delphian inscription of the year 273-2, is a proxenos-decree in behalf of Εὐβίῳι Ἀλύπου Λοκρῶι ἐγ Λαρίμνας.<sup>2</sup> Of course, as Beloch (III, 2, p. 360) observes, this shows clearly that Larymna went over to the Boeotians definitely at least after the time of Cassander, and hence probably in the (hypothetical but not unlikely) revival under Abaeocritus, prior to 245 B.C. (cf. Beloch, III, 1, p. 642). This conjecture may now be regarded as certain since the admirable publication by Miss Goldman, in this JOURNAL, 1915, pp. 445 ff., of an inscription from Halae, dated ἀρχοντος Φίλωνος τοῦ κοινῶι Βοιωτῶν. Now Philo, as Dittenberger, on *I. G.* VII, 237, has convincingly argued, falls between 260 (or possibly a little earlier) and 246 B.C. Since the fortunes of Halae were necessarily intimately bound up with those of Larymna (cf. also Miss Walker and Miss Goldman, *op. cit.*, p. 420), there can be no doubt that the latter also became Boeotian not long after 273-2, the date of the Delphian inscription just mentioned. Shortly after 229 B.C., possibly ca. 227, Larymna seems to have been still Boeotian, if one be inclined to insist upon a perhaps fair inference from Polybius,<sup>3</sup> but the text is altogether too uncertain to lay stress upon the evidence.

<sup>1</sup> The fine fortifications of Halae, which was also, at least at a later date, a Boeotian harbor, seem to belong to the same style, and are in part at least of exactly the same reddish limestone. Compare Miss Walker and Miss Goldman, *op. cit.*, pp. 432 ff. Miss Goldman, in a letter, substantiates my statement that the material is identical.

<sup>2</sup> *S.G.D.I.*, 2593. J. Beloch, *Klio*, II, 1902, pp. 208 ff., 223 ff., and *Gr. Gesch.* III, 2, p. 357, sets this inscription (archonship of Archiades) in 273-2, disagreeing with Pomtow's first dating. The discovery of new inscriptional evidence has led Pomtow to accept Beloch's date. See *Gött. Gel. Anz.*, 1913, p. 148, 3, and *Klio*, XIV, 1914, pp. 314 ff.

<sup>3</sup> XX, 5. 7. Without punctuation the passage reads: Ἀντίγονος...πλέον ἐπέτινας πρῶτος πρὸς τὰ ἱσχυρὰ τῆς Βοιωτίας πρὸς Λάρυμναν παραδόξου γενόμενης ἀμπότρου ἐκθίσαν ἐς τὸ ξηρόν αἱ νῆες αὐτοῦ. Schweighäuser puts a comma after Λάρυμναν, making that the objective of Antigonos, and is followed therein by Dübner and Büttner-Wobst. Yet the objective of the expedition

Between 226 and 216 B.C., Larymna was a Boeotian town, as is shown from the agonal inscription of Lebadeia.<sup>1</sup> In the

of Antigonus is distinctly said to have been all along Asia (§11 αὐτὸς δὲ τὸν προκείμενον ἐτίλει πλοῦν εἰς τὴν Ἀσίαν), and the action of Neon in letting him sail away as soon as he saw what the real situation was is puzzling if not inexplicable, in case his object was really an attack upon Boeotia (cf. Niese, *Gesch. d. gr. u. maked. Staaten*, II, p. 326). Bekker and Dindorf put the comma after Βοιωτίας, which leaves πρὸς in a strange use with Ἀδρυμναί. Hultsch, following part of a first idea of Schweighäuser, reads, *περὶ* A. for *πρὸς* A., a reading accepted also by Strachan-Davidson (p. 445). Shuckburgh, following both parts of Schweighäuser's conjecture, *παρά* for the first *πρὸς* and *περὶ* for the second, translates "Antigonus . . . happened to be sailing on some business along the coast of Boeotia; when off Larymna," etc. One might note that the word Larymna is badly mangled, and the sentence contains also a *nominativus pendens*. This last, though unfortunately too common in Polybius, might, combined with other evidences of corruption, suggest the possibility of a lacuna.—Regarding the ebbs and flows in the bay of Larymna, it may be of interest to observe that Ulrichs (*op. cit.*, p. 231) had noticed that the tide was extremely high under a northeast wind. It so happened that on a perfectly clear and windless day (July 8, 1914) between 8:02 and 11:20 a.m. I noticed at the old bridge across the Revma (which by the way has eight arches and not five as Baedeker (Lolling) and Frazer say, though the water now flows through only six of them) a shift in the tidewater of more than 250 yards, indicating a change in level, as I then estimated, of between two and three feet. A flow and ebb only slightly in excess of this would have embarrassed any ancient fleet, accustomed as men then were to anchoring very close to shore.

Pausanias' statement that Larymna had a λίμνη ἀγχιβαθής (IX, 23, 7), has been generally emended to λιμὴν (so Ulrichs, *op. cit.*, p. 223, n. 13, followed by Schubart, Spiro, Hitzig and Blümner), as no deep-margined lake could under any conceivable circumstances have existed in the vicinity. The statement regarding the harbor is, however, fairly satisfactory. According to the British Admiralty map (*The Talanta Channel*), a depth of seven fathoms is reached at a point comparatively close by to the east of the old town. Comparing this with the same soundings of harbors in the vicinity (*The Talanta Channel* and *The Gulf of Volo with Oreos and Talanta Channels*) it seems that a depth of five or more fathoms comes closer to the shore just opposite Larymna than it does at Oropus, Aulis, Chalcis, Anthedon, Halae, Cynus, or Aedepsus. Eretria alone of the more important harbors has as good depth close to shore. The bay of Skroponeri has deep close shore anchorage, but the mountain, prevented it from becoming an important port.—The attempt of Philippson *Zeitschr. d. Ges. f. Erdk. zu Berlin*, XXIX, 1894, pp. 50 f. to defend the MS. reading in Pausanias by referring it to the spring basin of the old Kephalaria is futile. This point was about three miles away, and could never by any stretch of imagination have been called "a deep margined lake."—Bittner's suggestion (*op. cit.*, p. 3) that the whole upper valley of Larymna was a lake down to the historical period is too improbable to deserve a formal refutation.

<sup>1</sup> Her commissioners and βασιβοφόροι take part in celebrating Boeotian games, I.G. VII, 3078; completely published by Volgraff, *B.C.H.* XXV, 1901, pp.

second quarter of the second century B.C., Larymna was Boeotian, as we learn from an inscription of Mt. Ptoon,<sup>1</sup> and it was distinctly such when Sulla fell upon the country in 86 B.C. (see pp. 49 ff.). In the pursuit of the enemy after the battle of Orchomenus, Sulla completely destroyed Anthedon, Larymna, and Halae, obviously the principal naval bases of Mithridates. It was at this time, probably, as we have seen above, that Upper Larymna was established. Lower Larymna was Boeotian in Strabo's day, and Pausanias follows the same tradition (from his *Periplus* source doubtless). Thenceforward the town disappears from history. For a time in the period of the Christian era it seems to have been called Larissa. Such at all events is the testimony of the anonymous author of a geographical pamphlet entitled "*Ὅσαι τῶν πόλεων ἐν τοῖς ὑστερον χρόνοις μετωνομάσθησαν*" (best published by A. Burckhardt in his edition of Hierocles, Leipzig, 1893) p. 64, l. 54 (Parthey): *Λάρυμνα ἢ Λάρισσα*. The treatise in question seems to be later than Hierocles (*i.e.*, after 535 A.D.), but its exact date is unknown (K. Krumbacher, *Byz. Literaturgesch.*<sup>2</sup>, pp. 417 f.). This definite and not incredible statement throws light, I think, on a passage in Solinus, 7, 25 f. (Mommson): *Boeoti* (a mistake for *Locri*) *idem sunt qui Leleges fuerunt: per quos defluens Cephisos amnis se in mare condit.* (26) *in hac continentia Opuntius sinus, Larisa oppidum, Delphi, Ramne, etc.* Now widely spread as the name Larissa was, there is no other record of any for the whole region of Locris, Phocis, and Boeotia. Besides Solinus has just been mentioning the lower Cephisos and his source unquestionably contained some notice regarding the Locrians. It is hardly conceivable that he could have written *Boeoti* for *Locri* just here had there not been some confusing statements before him about Larymna being Locrian as well as Boeotian; and that it was an arrant blunder

365 ff. The date which Dittenberger assigned (first century B.C.) was shown to be wrong when the stone was removed to the museum and the complete inscription could be read. The mention of Ptolemy Philopater and the participation of a Locrian in the games are the deciding considerations in Volgraff's certainly correct reading.

<sup>1</sup> I.G. VII, 4137, Κάτιλλος Σπράτωτος Αηρουμνεὺς ἀνέθηκε κτλ. As a real Locrian mentioned on the same stone is listed Καλλιχλίδας Λοκρὸς ἐκ τῶν Ὀρχομένων (No. 4136), there can be no doubt that Larymna was at this time regarded as a Boeotian city. This bit of evidence has been strangely overlooked. The inscription dates between 178 and 140 B.C. (Holleaux followed by Dittenberger).

for the Thessalian town is less likely, because Solinus goes right on to mention the latter in its proper place (8, 2). His source, or sources, must, therefore, have mentioned Larymna in this connection, and Larissa is put here for it because of some record of change in name, that the sources of Solinus gave (cf. note 2 below). In view of the evidence of the anonymous geographer quoted above I do not see how any other interpretation of this passage can be maintained.<sup>1</sup> As Solinus seems to take no notice of the provincial reforms of Diocletian, the *terminus ante quem* for the changed name of Larymna would be the end of the third century of our era.<sup>2</sup>

As will appear hereafter, Larymna had so declined in relation to Bumeliteia by the time of Justinian, that the latter had quite supplanted it. This fact probably will explain the change of name. The designation, Larissa, seems to mean a fortress,

<sup>1</sup> After the above was written, I discovered that Salmasius (*Plinianae Exercitationes*, Utrecht, 1689, p. 103a F) had made the following brief but apposite remark upon the passage in question from Solinus: *Sed in illa continentia nullum oppidum Larissa. Larymnam puto voluisse dicere.*

<sup>2</sup> The anonymous tractate and Solinus may now explain the curious errors of the Scholia on Lycophron, 1146. The older paraphrase (P) gives quite correctly πόλις [Κολχίδος] Λοκρίδος where Κολχίδος of B is probably a mere palaeographic error. On the other hand the Scholia give Λάρυμνα πόλις Θεσσαλίας to which Tzetzes added τὴν δὲ Λάρισσαν καὶ οὕτως λέγει Λάρυμναν. We must conjecture from these curious and egregious errors, which nothing in the context could possibly have suggested, that the more elaborate original (the commentary of Sextio perhaps?) had a statement about Larymna as a Locrian city, adding that it was now called Larissa (ἡ νῦν καλεῖται Λάρισσα, or the like). This the scholiast, having heard of the famous Thessalian Larissa, then stupidly abbreviated into Λάρυμνα πόλις Θεσσαλίας, while Tzetzes, with different but equal stupidity, actually censures the poet for having called Larissa Larymna, i.e., confused the two places!—Now that the oldest commentary had some indications of name changes here, may possibly appear from the fact that Tzetzes on this same verse remarks regarding the Spercheus: ὅς νῦν Σαλαμβρία καλεῖται. This is to be sure at variance with the anonymous author in the appendix to Hierocles, who gives: Πηνειὸς ποταμὸς ἢ Σαλαμβρία (8\*), but the Spercheus also appears in these lists: Σπερχεὺς ποταμὸς ὁ νῦν Ἀγριομήλας (cf. 58\*). Both statements are combined by Tzetzes, *Chil.*, IX, 705 f., who says that the Peneus, the Onochenus, the Spercheus, and others were called Salambria, but if there be any truth in the statement of the tractate just referred to: Σπερχεὺς ποταμὸς καὶ Ἀγριῶν Φαρσάλων ποταμοί (58\*), there may be some excuse for the mistake of Tzetzes in the commentary on Lycophron.—In any event the fact that Larymna was later called Larissa cannot now be doubted, supported as it is by the direct testimony of the tractate, and the indirect evidence of Solinus and of Tzetzes, together with the Scholia to Lycophron.

*burg*, or *arz*. After the inhabitants had abandoned the place, the remains of its massive fortifications suggested the name *Λάρισα* the *arz*, which, by the way, is only the ancient equivalent for the modern appellation of the town proper, as distinct from the district, *Kastri*. It is noteworthy by way of evidence that the site was not occupied by any considerable population in late Roman or Byzantine times, that there are no extensive remains of Byzantine churches, and few shrines in the immediate vicinity, so that the town cannot have been long occupied after the introduction of Christianity. Furthermore the excellent preservation of the walls shows that the site was deserted in the later



FIGURE 5.—UPPER LARYMNA. VIEW UP THE REVMA TOWARD THE COPAIC LAKE

period of antiquity and during the Byzantine and Turkish domination.

Finally it may be noted that some confirmation of Boeotian control of Larymna may be seen in the new inscription published in this JOURNAL for 1915, p. 321, which gives the rare and distinctively Boeotian name of *Ἰσμήνων*. The regularly formed letters without apices would date this stone as certainly no later than the second century B.C.<sup>1</sup>

As to the local form of the name, it was *Λάριμνα* as evidenced

<sup>1</sup> From the Boeotian period of course comes the gloss of Hesychius: *Λάριμνα. πόλις Βοιωτίας*.



by the united testimony of texts (add to those already cited, the gloss in Hesychius (above) and Lycophron, 1146), and inscriptions.<sup>1</sup> The strange form *Ληρουμεύς* of an inscription from Mt. Ptoon would seem to be a Boeotian dialectic form.<sup>2</sup>

As for signs of a change in sea-level between antiquity and the present (an important matter along the coast of Locris), the evidence is inconclusive.<sup>3</sup> A very slight subsidence might be inferred from the fact that of the original eight arches of the bridge over the Revma (probably Turkish), only five are in full use, a sixth partly filled up, and the other two on the south side completely clogged (cf. p. 52, note 3 above). The city walls are

<sup>1</sup> Compare the inscription published by Jardé, *B.C.H.* XXVI, 1903, p. 329, No. 35c, 2 *Λαρόμυας* and 16 *Λαρόμυα*; the inscriptions cited above (*S.G.D.I.* 2593 *Λαρόμυας* and *I.G.* VII, 3078 *Λαρουμεύς*); *I.G.* IX, 1, 235, 4 *Λαρόμυης* (epic influence); *I.G.* VII, 1765, 11 (Thespieae) *Λαρουμεύς*; *C.I.G.* II, 1936, 9 (Brit. Mus., provenience unknown) *Λαρουμάλω*.

<sup>2</sup> See note 1, p. 54.—The inscription shows the typical forms of the Boeotian dialect throughout. The *ov* for *u* is of course one of the most characteristic features of Boeotian inscriptions. On the other hand the *η* for *α* furnishes some difficulties. Dittenberger (*Syll.*<sup>2</sup>, 557, n. 19) felt confident that the *η* represented *α* from *αε*, the town name being composed of *λᾱς* and *ἐρουμῆς*, an etymology which he felt to be "loci naturae accommodatissima." However, it would be difficult to find anywhere in Greece a spot less likely to be called a *λᾱς* than the flat, low-lying peninsula on which the town was built. Nor were the fortifications, though noticeably well preserved now, in any way exceptionally massive for an early period of antiquity. Professor Buck had the goodness to send me the following note: "There is every reason to be puzzled by the *η* of *Ληρουμεύς*, and I can think of nothing but an unaccountable vagary of the hand or the mind of the stonemason, who wrote as if the name of the town were *Λαρουμνα*. Without further evidence one will scarcely credit the real existence of such a form. As for Dittenberger's explanation, even if the etymology were appropriate topographically, I should think it remarkable that the uncontracted form should turn up here and here only, against all other evidence of simple *Λᾱρ*."

<sup>3</sup> In this connection I might take occasion to correct Frazer, who speaks of Larymna having suffered in the earthquake of 1893 (p. 109). As a matter of fact Larymna felt only faint tremors at this time, when the epicentrum was near Thebes (C. Mitropoulos, *Petermann's Mittheil.*, XL, 1894, pp. 218 f.). The great earthquakes which were most severe precisely on the Larymna peninsula and were felt even in Wilhelmshaven and Birmingham occurred on April 20 and 27, 1894. See the articles by Skuphos, Mitropoulos and Papavasiliou quoted above, p. 46, note 1. The following bit of misinformation regarding Larymna is the more astonishing because of the average high reliability of its sources: *The Medit. Pilot*, IX, 4th. ed., 1908, p. 131: "Lake Topolias or Copais, whose waters discharge into this port (!) as well as Lakes Likeri and Paralimni which are connected with it by a canal, have been partially drained and brought under cultivation."

built very close indeed by the sea, so that the foundations are actually for the most part below high water mark, and the stone has suffered much from the action of the salt water. It is not impossible that originally they may have been a few feet farther away.<sup>1</sup> On the other hand the inner harbor is so absurdly shallow now that it is difficult to conceive of it as ever having been any more shallow. Furthermore the old polygonal wall on the inner harbor side is a considerable distance from the water's edge. Probably the harbor was artificially deepened in antiquity, an operation which would apparently not be difficult, as the surface



FIGURE 6.—UPPER LARYMNA. THE ACROPOLIS, SHOWING FRAGMENTS OF WALLS

near by seems to be composed of shingle and small stones only. This inner harbor is so small, and yet so powerfully protected with piers and towers, between which chains must have been drawn in antiquity, that it can only have been a war harbor.<sup>2</sup> As such, sheds along its sides could have accommodated a small-sized fleet. Since the towers are of the same style and material as the other later walls, I should have no hesitation in ascribing the

<sup>1</sup> In view of the difficulty of laying such a sea wall, where it does not appear to have been actually necessary.

<sup>2</sup> See Figure 4. I may note in passing Ulrichs' strange fancy that these piers at the mouth of the harbor were supports of an ancient bridge (*op. cit.*, p. 231).

powerful fortifications of this little naval base to Epaminondas, with whose general policy its date and construction best agree. The commercial harbor was on the east side, where considerable remains of two large moles may yet be seen.

At Upper Larymna I noticed that the city wall on the northwest, toward the mountain, can be traced for some 30 m., that towers appear at the two angles, northwest and northeast, and there was possibly one in the centre. The northeastern part of the hill was the acropolis, and towards the southwest there are traces of a gateway, possibly one leading to the lower town.<sup>1</sup>

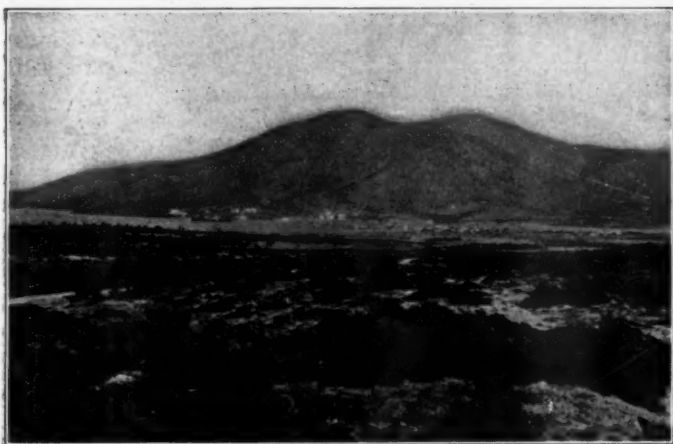


FIGURE 7.—LARYMNA. THE TOWN AND HARBOR FROM THE NORTHWEST

Figures 5 and 6 will give some idea of the general location of this settlement.

As for the etymology of Larymna, the word seems to be generally ascribed to the Carians (Leleges), doubtless in view of the Carian town of much the same name.<sup>2</sup> If it be really connected

<sup>1</sup> The iron and nickel mines which A. Struck (*Zur Landeskunde von Griechenland*, Frankfurt a.M., 1912, p. 20) ascribes to Larymna belong really to what was anciently Boeotia, being situated at Neo Kokkino just above the *Megale Kalavothra*. The ore steamers remain in the deeper water on the east side of the bay, which is more easily reached by the railroad from the mines. See the general view, Figure 7.

<sup>2</sup> G. Meyer, *Die Karier*, Königsb. Diss., Gött., 1885, p. 18; A. Fick, *Vor-griech. Ortsnamen*, p. 80 (Carian), p. 136 (Lelegic); O. Gruppe, *Griech. Myth. u. Religionsgesch.*, p. 260, 9. L. Grasberger, *Studien zu griech. Ortsnamen*,

with Λάρυμνα, Λάρυμνα, etc., the gloss in Hesych.: λαρυμνόν· βαθύτατα, κατώτατα would suggest a most appropriate meaning for the name Λάρυμνα, as it lies on the sea at the very lowest point of the Cephissus-Copais valley, occupying besides an extremely low elevation only a very few feet above actual sea-level, and is quite without an acropolis of any kind. The historical conclusions that may be drawn from this must await the solution of the vexed questions of the prehellenic ethnography of Greece.<sup>1</sup> It may be suggested, however, as plausible, that upon this fact of the appearance of a rare place name both in East Locris and in Caria, and on certain other facts of the same sort, may have been based the oft-repeated assertion that the Locrians were originally Leleges (i.e., Carians).<sup>2</sup>

Würzburg, 1883, p. 262 (cf. 169), connects it with λαφ, λαφρα. Dittenberger's etymology, λᾱs+ἐρυμνός, has been discussed above. It might be noted that some support for the Latin authors who call the Carian town *Larumna* (Mela), *Lorimna* (Tab. Peut.) and *Larymna* (Pliny), whereas most Greek writers call it *Loryma*, may be found in Georgius Cyprius, 1467 [Gelzer], δ (i.e., the bishop of) Δαρύμων. This presupposes a nominative Δάρυμνα, a form which appears in Const. Porph., see *Themal.*, III, 37, 9, (Bonn ed.).—For a theory of religious-historical relations, see O. Gruppe, *Griech. Myth. u. Religionsgesch.*, p. 260.

<sup>1</sup> Lobeck, *Pathol. Sermon. Gr., Proll.*, p. 170, pointed out that Δάρυμνα was a feminine form, while Λάρυμνα was a neuter plural (cf. E. H. Tzschukke on Pomp. Mela II, 45) and λαρυμνόν an adjective, but that merely calls attention to the fact that the three forms are not identical; they may be closely related for all that.

<sup>2</sup> In this connection it is well to remember that there was a tradition in accordance with which Minyans and Leleges were very closely connected if not actually identified. (*Plutarch, Quaest. Graec.*, 46: a law at Tralles about the proper atonement to be made by the person who had killed a Minyan or a Lelex, τὸν κτείναντα Μινύην ἢ Λελέγην). Larymna as the haven of the Minyan Orchomenus and as having a name suggestive of the Carian city would thus be a link in the line of argument used to identify Carians and Leleges. It is worth noting also, that though the Leleges are said to have been identical with the early Locrians, they never forced entrance into the list of eponymous ancestors beginning with Amphiktyon and ending with Aias. (cf. *Philol.*, LXVII, 1908, pp. 440 ff.). Nor is there any actual record of them about Opus or Cnemis. Pliny's source, however (see above), connects his statement about the Leleges with the notice regarding the outlet of the Cephissus, for as the jumble stands now in Pliny, it would appear that the Epimenidians were the Locrians who lived at the mouth of the Cephissus, a statement which is notoriously false. The authority which Solinus followed (in this case certainly something more than Pliny, see above) also spoke of Leleges in immediate connection only with the mouth of the Cephissus. We can hardly be wrong therefore in conjecturing that the tradition of Lelegic origin for the Locrians was built up in large part at least about Larymna, its name and its historical associations.

As the Locrians seem to have occupied this part of their country only at a relatively late date, were at no time very numerous, and seem to have established aristocratic forms of government suggestive of the subjugation of a relatively large number of predecessors in the land, it may well be that some remnants of the prehellenic population of Greece may have lingered on in this out of the way region until well into the historical period. That the Locrians proper were as pure Greek as any other tribe, however, their dialect, cults, and mythology attest.

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## THE PROBLEM OF BYZANTINE NEUMES

THE musical notation of Greek liturgical manuscripts from the tenth to the thirteenth century has long been a puzzle to investigators,<sup>1</sup> although the notation from the thirteenth century onwards can be read with virtual certainty. The earlier, at present obscure, system may be called the Linear Notation (Abbr. NL) while the later decipherable system is called the Round Notation (NR). These notations have some common features.<sup>2</sup> Both contain: (1) Interval-signs, (2) Martyriae or key-signatures, giving the mode of every hymn, (3) Hypostases or subsidiary signs, indicating duration, expression, or other peculiarities of execution. The melody is not given, as in our music, by shewing the pitch of every note. From the Martyria we can infer the pitch of the first note alone. All subsequent progressions are reproduced by the interval-signs, which tell us how far above or below the preceding tone any given syllable is to be sung.<sup>3</sup>

The Martyriae are in most cases simply the first four Greek letters, giving the number of the mode, with the abbreviation  $\pi\lambda$ , or  $\lambda$  for the plagal modes. The third plagal is called Barys or "deep," and its name is sometimes abbreviated. Various

<sup>1</sup> Authorities: Am. Gastoué, *Introd. à la Paléogr. mus. byz.*; H. Riemann, *Die byz. Notenschrift*. Only these two writers have seriously attempted to transcribe music of the Linear System. Neither, so far as I can judge, has been successful. P. J. Thibaut, *Origine byz. de la Notation Neumatique de l'Eglise latine*, discusses many of the symbols.

<sup>2</sup> The comparison of the musical setting of hymns extant in both notations only proves a general likeness, but does not enable us to identify any formula definitely.

<sup>3</sup> For the Round System cf. (besides the books already mentioned) O. Fleischer, *Neumenstudien*, T. 3 (This is the most useful for beginners, but only deals with the latest phases of NR); U. Gaisser, *Les Heirmoi de Paques*. My articles in *B.S.A.* XVIII, and in *Musical Antiquary*, January and April, 1911, and July, 1913, also deal with the Round System. In *B.S.A.* XIX, I tried to discuss some points in the earlier Linear Systems.



theories are held as to the tonality of the eight modes. But in the present case they do not concern the matter at issue, for (1) the interval signs are independent of tonality; and (2) the *Martyriae* passed unchanged from the Linear to the Round System, so that any satisfactory account of their nature in the later notation will apply *ipso facto* to the earlier. For our purpose we may take the most generally held view of the modes, which may be found in the works of Gastoué and others.

If we compare the interval-signs in the two notations, we notice: (1) Of the fifteen signs found in the Round Notation twelve can be traced in the Linear; (2) in many cases familiar groups of signs seem to be common to the two systems (but not necessarily with the same value); (3) NL has a number of interval-signs which did not survive in NR. Some may have been altogether lost; but the majority were retained as subsidiaries of various kinds; (4) some of the subsidiaries in NR seem to be already established as such in NL. The main difficulty lies in our ignorance of the laws of subordination enforced in the Linear System. In NR certain signs lose their interval-value when combined with certain other interval-signs. This is called *Hypotaxis*. The rules are very complicated; but the mediaeval handbook called the *Papadike*<sup>1</sup> gives them clearly, and tabulates most of the combinations in use. But for the Linear System we are entirely in the dark. Thus, if *a* and *b* are two signs, we are left wondering whether a formula like *a/b* has the value of *a* plus *b*, or *a* alone or *b* alone. Uncertainty of text, which we have no means of rectifying, greatly adds to the difficulty of approaching an unknown notation. After many trials and experiments with the methods of other theorists, as well as with all those that seemed at all possible to myself, I am venturing to suggest the following scheme of interval-values for the various signs.<sup>2</sup> In the case of group-formulae any proposed evaluation is largely guesswork. For convenience I give the signs the names

<sup>1</sup> Published by Fleischer, *op. cit.*

<sup>2</sup> In 1912 I was enabled by the generous provision of grants from the Carnegie Trust for the Scottish Universities, and also from the Hort Fund of the University of Cambridge, England, to visit Mt. Athos and Sinai, where I photographed a large number of MSS. (I have since made trial versions of about 200 hymns in the Linear System.) My work was greatly helped by the kind encouragement of His Blessedness the Archbishop of Sinai and by the Brethren at the Monastery, where I had every facility for research afforded to me.

attached to them in the Round System, except where difference of usage might make this misleading. In Figure 1 are exhibited the interval signs used in the latest stage of the Linear System.

1 <sup>a</sup> <sup>b</sup> <sup>a</sup> <sup>b</sup> <sup>a</sup> <sup>b</sup> <sup>c</sup> <sup>d</sup>

4 <sup>a</sup> <sup>b</sup> <sup>a</sup> <sup>b</sup> <sup>a</sup> <sup>b</sup> <sup>c</sup> <sup>d</sup> 5 <sup>a</sup> <sup>b</sup> 6 <sup>a</sup> <sup>b</sup> 7 <sup>a</sup> <sup>b</sup> 8 <sup>a</sup> <sup>b</sup> 9 <sup>a</sup> <sup>b</sup>

10 <sup>a</sup> <sup>b</sup> <sup>c</sup> <sup>d</sup> 11 <sup>a</sup> <sup>b</sup> 12 <sup>a</sup> <sup>b</sup> 13 <sup>a</sup> <sup>b</sup> 14 <sup>a</sup> <sup>b</sup> 15 <sup>a</sup> <sup>b</sup>

16 <sup>a</sup> <sup>b</sup> <sup>c</sup> 17 <sup>a</sup> <sup>b</sup> 18 <sup>a</sup> <sup>b</sup> 19 <sup>a</sup> <sup>b</sup> 20 <sup>a</sup> <sup>b</sup> 21 <sup>a</sup> <sup>b</sup> <sup>c</sup> <sup>d</sup> 22 <sup>a</sup> <sup>b</sup> <sup>c</sup> <sup>d</sup> 23 <sup>a</sup> <sup>b</sup> <sup>c</sup> <sup>d</sup>

1 <sup>ἦχος</sup> <sup>Δ</sup> ΕΝ ΤΩ ΟΥΡΑ ΝΩΙ. ΤΑ ΟΜΑΜΑ ΤΑ ΕΚ ΠΕΜ ΠΩ  
 ΜΟΥ ΤΗΣ ΚΑΡΔΙΑΣ. ΠΡΟΣ ΕΣΩ ΤΗΡ. ΩΣΟΝ ΜΕ ΤΗ  
 ΕΠΙ ΛΑΜΨΕΙ. 2 <sup>ἦχος</sup> <sup>Δ</sup> Α ΓΙ Ψ ΠΝΕΥ ΜΑ ΤΙ. ΠΑΣΑ Η  
 ΚΤΙΣΙΣ ΚΑΙΝΟΥΡΓΕΙ ΤΑΙ. ΠΑ ΛΙΝΔΡΟ ΜΟΥΣΑ ΕΙΣ ΤΟ ΠΡΩ  
 ΤΟΝ. Ι ΣΟΣΘΕ ΝΕΣ ΓΑΡ ΕΣΤΙ. ΠΑΤΡΙ ΚΑΙ ΛΟΓΩ.  
 3 <sup>ἦχος</sup> <sup>Δ</sup> ΔΕΥΤΕ ΑΝ ΥΜΝΗΣΩΜΕΝ ΛΑΟΙ. ΤΗΝ ΤΟΥ Ω  
 ΤΗ ΡΟΣ ΤΡΙ ΗΜΕΡΟΝ ΕΓΕΡ ΣΙΝ. ΔΙ ΗΣ ΕΛΥ ΤΡΩΘΗ  
 ΜΕΝ. ΤΩΝ ΤΟΥ ΔΙΔΟΥ ΔΑΥ ΤΩΝ ΔΕΣ ΜΩΝ. ΚΑΙ Δ  
 ΦΘΑΡΣΙΔΑΝ ΚΑΙ ΖΩΨΗΝ. ΠΑΝ ΤΕΣ ΕΛΑΒΟ ΜΕΝ. ΚΡΑ  
 ΖΟΝ ΤΕΣ. Ο ΣΤΑΥ ΡΩΘΕΙΣ ΚΑΙ ΤΑ ΦΕΙΣ ΚΑΙ ΑΝΑΣΤΑΣ.  
 ΩΣΟΝ ΗΜΑΣ ΤΗ ΑΝΑΣΤΑΣΕΙΣΟΥ. ΜΟΝΕ ΦΙΛΑΝΘΡΩΠΕ.

FIGURE 1.—LINEAR SYSTEM OF BYZANTINE MUSICAL NOTATION

- 1) Ison: Repeated note, as in NR.
- 2) Ison: This is the older form, and is alone found in the middle stage of NL. (In NR it is called Oligon, and = a second upwards.)
- 3) Apoderma (or Apodoma): Another stationary sign, used mostly at the end of phrases to express a repeated and sustained note. (In NR it has a similar use, but never stands alone.)
- 4) Oxeia, and 5) Petaste: Both, as in NR, denote an ascending second.
- 6) Kentema: Never used alone, but adds an ascending second to some other sign. The result may be a leap of a third. (In NR it makes, when attached to some other sign, an ascending third or fourth.)
- 7) Kentemata (*δύο κεντήματα*): Not used alone, but adds an ascending second, which is always taken by step (so in NR).
- 8) Hypsele: Usually seems to have no interval-value, but to indicate in combination with the ascending signs (4) or (5) and (6) that a large upward interval, generally a fifth, may be sung instead of the third which was actually reckoned. This device was perhaps meant to aid inexperienced singers, who might, if they preferred, sing the smaller interval, ignoring the Hypsele. (In NR it is never used alone; but with Oxeia or Petaste, it makes an ascending fifth or sixth.)
- 9) Apostrophus: Descending second, as in NR.
- 10) Bareia: Descending second. In NR it is a subsidiary with no sound.
- 11) Hyporrhoe: Two successive seconds downwards, as in NR. It cannot be the first symbol over a syllable.
- 12) Chamele: Usually in combination with Apostrophus. It turns a second into a fifth (or perhaps sometimes a fourth) without changing the interval-value (*i.e.*, the following interval will be reckoned as if a second, not a fifth, had been sung). A similar device has been noted with the Hypsele, No. 8 above. (In NR Chamele is never used alone, but makes with Apostrophus a descending fifth or sixth.)

#### *Compound Signs.*

13) Diple, or double Oxeia: It has the same sound as Oxeia, but indicates a note of double length. In NR it only lengthens a note, but has no sound.

14) Kratema (or Choriston?), and 15) Xeron Klasma: Ascend-

ing second with prolongation. Both are compounds whose elements are traced in the older NL; 14 is a stylised form of Petaste above Diple (one losing its interval-value by Hypotaxis), while 15 is made up of Diple and Klasma (No. 20 below). (These have no sound in NR.)

16) Kouphisma: This in NR = a second upwards, which is probably its value here. Form c. is always over two notes. The dot is probably the archaic point marking the conclusion of a phrase.<sup>1</sup> Some ornament is perhaps included, as the symbol *may* be made up of Petaste, Klasma and Hyporrhoe.

17) Double Bareia: Has the same value as the simple Bareia, but prolongs the note. (In NR it is called Piasma, and has no sound.)

18) Double Apostrophus (Ἀπόστροφαι σύνδεσμοι): Descending second with prolongation. Form a. is thus used in NR also. Two Apostrophai *vertically* superposed keep their full value—two descending seconds.

19) Kratymohyporrhoeon: Compound of 14 and 11, probably = an ascending and two descending seconds, the first note prolonged. In NR only the descending portion counts.

#### *Groups of Signs.*

The following rules of subordination appear to hold: (1) Ison annuls an ascending sign placed below it. (2) Diple is annulled not only by Ison but also by Oxeia, Petaste, another Diple or a descending sign placed above it.<sup>2</sup> (3) Bareia (whether single or double) is annulled by Apostrophus, however placed.

In other cases all the signs in a group keep their proper sound and interval-value.

#### *Subsidiary Signs.*

The following are classed as Hypostases or subsidiaries, because they never stand alone in the late Linear Notation, and appear to have no sound or interval-value.

20) Klasma (later also called Tzakisma): Probably indicates a staccato note with moderate emphasis.<sup>3</sup> So in NR.

21) Argon (?) This sign seems to indicate a very slight prolongation—so slight that the transcriber would merely put a

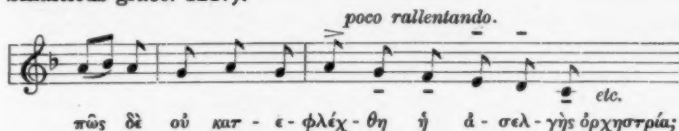
<sup>1</sup> This is regularly used in early neumatic MSS. eg. Laura B. 32: cf. Riemann, *op. cit.* p. 79.

<sup>2</sup> The effect of a grace-note may result from this collocation.

<sup>3</sup> I have not expressed this in my versions. The effect will be sufficiently rendered by the intelligent singing of the words themselves.

small stroke over the note concerned. Some MSS. are very fond of this sign, as the following extract shows:

Hymn for Death of S. John Baptist, August 29th (Cod. Sinaiticus graec. 1217).



Here it occurs four times in succession. (Form c. is the Argon of NR, which seldom uses it.)

A somewhat larger half-circle is used in NR for a descending *third* (called Elaphron). It is possible that it is similarly used in late examples of NL in conjunction with the Apostrophus. But so far the instances are too few to warrant any definite conclusion.

22) Tinagma (?): Perhaps a tremolo. The Kylisma of NR may be the same.<sup>1</sup>

23) Parakletike or Enarxis (?): Used at the beginning of a phrase, probably as a mark of expression (*παρακαλεῖν* = to entreat or exhort). It seems to have no sound or interval-value in late NL, though in the archaic forms it may have had.

These signs, most of which occur several times in course of our examples, are the commonest of the many subsidiaries used in the Linear Notation. For fuller details and conjectures the reader is invited to look elsewhere.<sup>2</sup>

#### *General Rules for Transcription.*

In every mode one or other of the finals may be used as a starting-note: it is easy to find by trial which is the more convenient. After any phrase has ended on a cadential note, we may make a fresh start from one of the other starting-notes<sup>3</sup> (I show this by a wavy line in the transcript). As our system uses no sign of more than a third interval-value, the above method was the easiest way of making a leap when desired.<sup>4</sup>

<sup>1</sup> Fleischer, *op. cit.* p. 52 and 53, no. 6.

<sup>2</sup> Gastoué, *op. cit.* pp. 14, 33. Thibaut, *op. cit.* 34, 51, etc.

<sup>3</sup> Whether the sequence can also be broken after notes only used for *medial* cadences (e.g., *f* in Mode I, where the proper finals are *d* and *a*) is at present uncertain.

<sup>4</sup> Riemann's theory (*op. cit.* p. 57) that every phrase, no matter where the preceding one ended, must start from the "final," is not only most inconvenient in practice, but deprives us of almost all check on the transcription. Moreover, the division of phrases is itself often uncertain.

In the Round System, which was well supplied with signs for large intervals, this was not necessary. The return of the last phrase to the proper final is the chief test of the accuracy of transcription. When this fails, it means either that the MSS. is at fault, or else that the interval-signs have not been properly read.

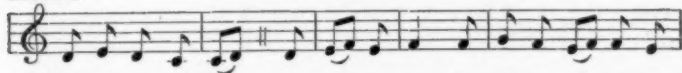
The rhythm of Byzantine music is a matter of some uncertainty. The question, like that of tonality, affects all stages of the notation, and is independent of the interval-signs. I adopt provisionally the simplest possible method,<sup>1</sup> by which every plain note is counted as a quaver, and a prolonged note as a crochet. A small double-bar marks the end of a phrase (usually indicated by a dot in the MS. text). The other bars do not answer to anything regularly occurring in the MSS., but are put in to aid the singer. It is generally admitted that the musical accents follow the word-accents, on which Byzantine prosody mainly depends.

#### Examples.

The three short hymns here reproduced can be read very easily by the rules already given. The first and second are parts of antiphones from the Octoechus<sup>2</sup>; the third is from the *Stichera Anastasima* ascribed to Anatolius,<sup>3</sup> and also included in the Octoechus. Mode I has *a* and *d* as its Finals. Mode IV usually starts on *g*. Sometimes, as here, it needs *c* as its lower final, in which case the signature of one flat is required.

#### PARTS OF TWO ANTIPHONES FROM THE OCTOECHUS COD. SINAITICUS GRAECUS 1244 (SEE FIG. 1)

##### MODE I



(1) Ἐν τῷ οὐ - ρα - νῷ (2) τὰ ὄμ - μα - τα ἐκ - πέμ - πω μου τῆς καρ -



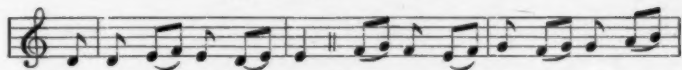
δί - ας (3) πρὸς Σὲ Σω-τήρ (4) σὺ - σὸν με τῷ ἐ - πι - λάμ-ψει.

<sup>1</sup> Gastoué has, generally speaking, followed a plan similar to this.

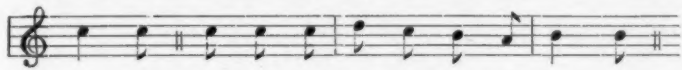
<sup>2</sup> These are partly made up of verses from the Psalms. Examples given in W. Christ & Paranikas, *Anthologia*, p. 53. Our second example is on p. 54.

<sup>3</sup> Text, *ibid.* p. 113.

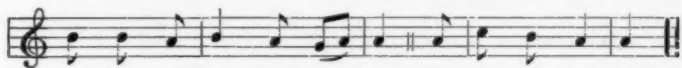




(1) 'Α - γί - ψ πνεύ - μα - τι (2) πᾶ - σα ἡ κτί - σις καιν - ουρ -

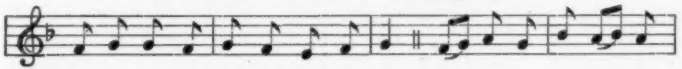


γαί - ται· (3) πα' - λιν - ὄρο - μού - σα εἰς τὸ πρῶ - τον

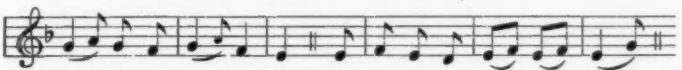


(4) ἰ - σο - σθε - νὲς γάρ ἐσ - τι Πα - τρι καὶ Λό - γω.

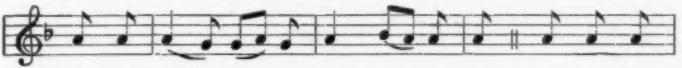
FROM STICHERA ANASTASIMA COD SINAIT GR. 1214



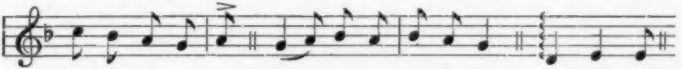
(1) Δευ - τε ἀν - υμ - νή - σω - μεν, λα - οί (2) τῇν τοῦ σω - τῆ - ρος τρι -



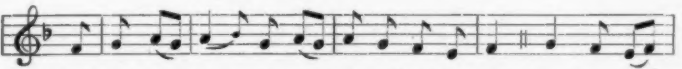
ἡ - με - ρον ἔ - γερ - σιν· (3) δι' ἧς ἐ - λυ - τρώ - θη - μεν



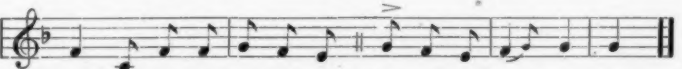
(4) τῶν τοῦ 'Αι - δου ἀ - λύ - των δεσ - μῶν· (5) καὶ ἀ - φθαρ



σί - αν καὶ ζω - ῆν (6) πάν - τες ἐ - λά - βο - μεν· κρά - ζον - τες.



(7) ὁ σταυ - ρω - θείς καὶ τα - φείς καὶ ἀ - να - στας, (8) σῶ - σον ἡ -



μᾶς τῇ ἀ - να - στασί - σαι Σου, (9) μό - νε φιλ - ἀν - θρω - πε.

Riemann reproduces two pages of a fine MS. of the Linear System (Paris, Bibl. Nat. Fonds Coislin 220).<sup>1</sup> I select two

<sup>1</sup>Op. cit., Pls. IV, V. In R's own version three of the seven odes appear to end on a wrong note—a difficulty scarcely to be avoided, as he suggests (p. 57) by giving the final Ison an indeterminate value. This would leave us without any criterion whatever for correct transcription. The Canon by Cosmas—Χέρσον ἀφυσσόδοκον—to which these odes belong, is given in *Anthologia*, p. 172.

odes, which need no emendation. Mode III is like our scale of F major. In ode 8 at Q there seems to be a carelessly written Bareia; the combination still only equals a second downwards.

## ODE 6, MODE III

(1) Ἐ - βό - η - σέν Σοι ἰ - δὼν ὁ πρέσ-βυς (2) τοῖς ὀφ - θαλ -  
μοῖς τὸ σω - τή - ρι - ον (3) ὁ λα - οῖς ἐπ -  
ἴσ - τη (4) ἐκ Θε - οῦ, Χρισ - τὲ Σὺ Θε - ὅς μόν.

## ODE 8, MODE III

(1) ἀ-στέκ-τη πν - ρι - ἐν - ωσ-θέν - τες (2) οἱ θε - ο - σε -  
βεί - ας προ-εσ-τῶ - τες νε - α - νί - αι (3) τῇ φλο -  
γὶ δὲ μὴ λω-βη - θέν - τες (4) θεῶ - ον ἡμ - νόν ᾧ - μελ -  
πον (5) εὐ - λο - γῶν - τε πᾶν - τα τὰ ἔρ - γα τῶν κύ - ρι - ον,  
(6) καὶ ὁ - περ - ψ - οῦ - τε αὐ - τὸν εἰς τοὺς αἰ - ῶ - νας.

It must not be thought that the majority of hymns in the Linear Notation can be read as easily as those given here. Owing to the uncertainty of value of many group-formulae, and the possibility of textual error, we can seldom be sure that our transcript is altogether right. The examination of a greater number of specimens, and further collation of various musical settings, should in time furnish us with a complete method of transcription. Such a result will be of the highest value for the history of mediaeval music.

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UNIVERSITY OF EDINBURGH.



## GENERAL MEETING OF THE ARCHAEOLOGICAL INSTITUTE OF AMERICA

DECEMBER 29-31, 1915

THE Archaeological Institute of America held its seventeenth meeting for the reading and discussion of papers at Princeton University, December 29 and 30, in conjunction with the American Philological Association, and at Washington, D. C., December 31, with the Nineteenth International Congress of Americanists. Five sessions for the reading of papers were held (three at Princeton and two at Washington) and there were two joint sessions with the Philological Association. The abstracts which follow were furnished by the authors.

WEDNESDAY, DECEMBER 29. 9.30 A.M.

1. Mr. L. D. Caskey, of the Museum of Fine Arts, Boston,  
*A Greek Head of a Goddess Recently Acquired by the Museum of Fine Arts, Boston.*

This paper will be published in full in a later number of the JOURNAL.

2. Professor H. Rushton Fairclough, of Stanford University,  
*Some Greek Vases in the Stanford Museum.*

The Stanford Museum collection, though very heterogeneous, embraces many individual exhibits of distinct importance. The nucleus of the whole is formed by the objects acquired by Leland Stanford Junior, who at an early age developed unusual intelligence as a collector. In 1884, young Stanford secured in Athens various specimens of ancient Greek pottery, some of which, in view of their rarity or their beauty, are important enough to be placed on record. Among these are the following: (1) A small Corinthian aryballus, to be assigned to the latter half of the seventh century, B.C. It shows a bull's head, presented full, between two lions. Cf. Morin-Jean, *Le Dessin des Animaux en Grèce*, where Fig. 101 shows a hare between two lions, and Fig. 140 a bull's head between two birds. (2) A beautiful example of an Attic lebes, 31 cm. high, 98½ cm. at the greatest circumference. It is decorated with a band of olive leaves and berries and preserves inside its original black polish. (3) Most of the specimens are those of red figured ware of the Fine

American Journal of Archaeology, Second Series. Journal of the  
Archaeological Institute of America, Vol. XX (1916) No. 1.

Style, second half of the fifth century, B.C. One is an Attic hydria, 28 cm. high, 75 cm. at greatest circumference. Five graceful female figures appear in a charming domestic scene, three seated on high-backed chairs, two represented as moving toward the central figure. A dog and a cockatoo are with the group. One seated figure holds a lyre. A mirror is in the field, to the right of the central figure. (4) An amphora, 30½ cm. high and 68½ cm. in circumference, shows two scenes, symmetrical with each other. On one side, a nude female dancer, holding a pair of castanets in each hand, looks back to a draped flute player, standing by. The black hair of the latter is varied in red with ivy-leaves. The second scene also shows two female figures, one seated, the other standing; one with a band across the hair, the other wearing a cap. The former holds a distaff and faces to the right; the latter looks back at the one seated, but her left foot is turned, as if she were about to move off to the right. In her right hand she holds up a piece of wool; in her left is a basket. (5) A crater, 29½ cm. high, 81 cm. in circumference, shows a band of olive leaves below the lip, while beneath the figures, and confined to the space below each group, is a meander border. On one side is a Bacchic scene, with a bearded Dionysus, his right hand holding a cantharus and his left a thyrsus, advancing between a dancing Maenad, who plays a cymbal, and a bearded Silenus, who holds a lecythus in his right hand and a lyre in his left. The ivy on the thyrsus and on the hair of the figures is white. The second scene shows three standing male figures clad in the himation, one holding a staff and facing the other two. (6) One specimen is "a globular vase, with vertical looped handles on a high stem." It is 44 cm. high, and 55 cm. in circumference. The stem has suffered considerable damage. On it is preserved only the lower half of four female figures with two baskets and a stool. There is also the end of a fillet. On the main body is a group of eight female figures, two of them winged and serving the artistic purpose of dividing the whole group into two halves, each with three figures. The central figure in each is apparently the recipient of presents from the others. This peculiar vase is a so-called *ἀθήνη γαμήκερ*, a form, according to Walters, "found almost exclusively in the Red Figured Period." Most of the extant specimens, as Miss Richter has shown, belong to the second period of this style. The only other example of this type of vase to be seen in America is in the Metropolitan Museum, New York. There, according to the official description, "the subject represented is probably the *Epaulia*, or day after the marriage, on which the friends of the bride brought the customary presents. In the centre is seated the bride playing the harp (trigonon). On both sides her friends approach to bring her gifts." There, also, we see four female figures on the stem. Three of them bring presents and one a fillet, while two baskets are on the ground. In the New York museum there is also a toy or diminutive *ἀθήνη γαμήκερ*, showing likewise a representation of the *Epaulia*. The extant specimens of this type are very rare. Miss Richter (*Annual of the British School at Athens*, No. XI, 1904-5) gives only twenty as the total for Greece, with none for Italy, the British Museum, or the Hermitage. There are none in Paris, but there are two in Madrid Leroux, *Catalogue*, Nos. 207, 208), one in Athens (Pijoan, *Historia del Arte*, I, pl. xx), and four in Berlin (Furtwängler, *Beschreibung*). For a discussion of the subject, one may consult Brueckner on 'Athenische Hochzeitsgeschenke' in the *Athenische Mitteilungen*, 1907.



3. Miss G. M. A. Richter, of the Metropolitan Museum, New York, *A New Euphronios Cylix in the Metropolitan Museum of Art.*

This paper will be published in full in a later number of the JOURNAL.

4. Dr. T. Leslie Shear, of Columbia University, *Head of Helios from Rhodes.*

This paper will be published in full in a later number of the JOURNAL.

5. Professor Allan Marquand, of Princeton University, *Some Sculptures in Princeton.*

This paper directed attention to the sculptures in public and private collections in Princeton. In Guyot Hall may be seen an interesting collection of prehistoric antiquities from Switzerland; in the Art Museum, amulets and *oushabtiu* from Egypt, an alabaster slab from Assyria, terra-cottas from Cyprus and Greece, stone heads from Syria, and marble sculptures from Greece and Rome. Attention was specially directed to an Athena head of the fourth century. For the Mediaeval period, the Art Museum contains a fine French statue, and an English alabaster relief. The Renaissance period is represented by sculptures from Italy, France, Spain, and Germany, while the modern sculpture of England and America is illustrated by a number of examples.

6. Dr. Joseph Clark Hoppin, of Boston, *The Bazzichelli Psykter of Euthymides.*

This paper will be published in the *Journal of Hellenic Studies.*

7. Professor James A. Montgomery, of the University of Pennsylvania, *A Latin Inscription and Some Other Antiquities in Southern Lebanon.*

The speaker contributed some notes on the archaeology of Southern Lebanon, describing some new groups of tombs and the fragments of what is evidently a Phoenician cult-pillar. He also read and commented on a Latin inscription which he discovered near the village of Abeih. It reads as follows:

OMRIUS  
MAXIMUS  
-IRAIFILIVS  
IOVIMO---A  
DESVOFECIT

"Omrius Maximus son of -ira made for Jupiter . . . . from his own property." This inscription in connection with a near-by deposit of tombs throws light upon the tomb builders in Lebanon who have long been an enigma to archaeologists. They evidently belong to the Roman period, and this dedicator was a man of Arabian stock, doubtless a member of the "Ituraean" race which, according to the classical historians, were then swarming into central Syria.

WEDNESDAY, DECEMBER 29. 2 P.M.

1. Dr. William J. Hinke, of Auburn Theological Seminary,  
*The Significance of the Symbols on Babylonian Boundary Stones.*

The first definite information as to the meaning of these symbols came to us from a stone found by the French in Susa and published in 1900. In the inscription of this stone curses are invoked on all offenders in the name of the great gods, "whose shrines are made known, whose weapons are shown and whose pictures are drawn." Accordingly the symbols represent the shrines, weapons and pictures of Babylonian gods. The problem resolves itself, therefore, into an identification of the symbols with the gods they were intended to represent. Fortunately the Babylonians themselves have often written the names of the gods alongside of the symbols. In one case the order of the symbols corresponds to the gods as enumerated in the inscription. In this way it has become possible to identify twenty-two of the symbols with the respective gods. But the symbols were more than mere representations of the gods. They represented the gods in their astral character and are, therefore, identical with certain stars and constellations. This is at once clear in the case of the crescent, the sun-disk and the eight-pointed star of Ishtar, in which case Ishtar is identified with the planet Venus. But a number of other symbols are clearly astral. Thus on a stone of Melishipak we have an archer, with the upper body human, the lower that of a horse, with two heads and two tails, one of a horse, the other of a scorpion. The figure is also provided with wings. This is the first representation of the winged centaur and agrees in all its details with the representation of the sagittarius on the Egyptian zodiac of Dendera. With this sagittarius the scorpion is associated in both cases. There is also perfect agreement between the Babylonian and Egyptian sign of the capricorn. In the case of the waterman, the new boundary stone, found by the Germans at Babylon, shows the amphora on a pedestal, just as in Greek zodiacs, and behind it a god pouring out water from a jar over his left hand. Here the meaning of waterman is clearly suggested by the picture. But the conclusive proof that constellations were really intended by these symbols is furnished by two Babylonian monuments. One is the well-known stone of Marduk-apal-iddina I, published by Rawlinson, on which, in the last register, a winged lion is walking on a serpent winding along the lower edge of the register. These same figures appear on a tablet in the Berlin museum, recently published (Jeremias, *Handbuch der altorientalischen Geisteskultur*, p. 247) where the serpent has the name (*kakkabu*) *Stru* and the lion, the words (*kakkabu*) *Ur-Gu-La*, written alongside of them. This shows that by the serpent the constellation of the Hydra, by the lion, the sign of the zodiac immediately above it, Leo, was intended. Another Berlin tablet published by Jeremias names the seven stars, found on several of the boundary stones, as (*kakkabu*) *kakkabu*, "the star," i.e., "the Pleiades." Again the symbol of Nin-mah, known from the stone of Nazi-maruttash, as *markasu rabu*, "the great band," is identical with the *riksu*, the band of stars uniting the northern and southern fishes. This identification also explains why the symbol of Nin-mah generally follows that of Ea. The fishes succeed the waterman in the zodiac. Other probable identifications are that of the serpent coiled on top of many stones

with the dragon (draco) near the north pole. The wolf on several stones is probably the wolf star (*LIK-BAT*) and the raven the raven star (*U-ELT-EG-GA*). Thus a constantly increasing body of evidence is accumulating that the symbols of the Babylonian boundary stones represent the Babylonian gods, in their capacity as astral deities, identified with certain constellations of the zodiac and of the dodecaoros.

2. Professor W. Sherwood Fox, of Princeton University, *Some Egypto-Roman Embroideries in the Royal Ontario Museum, Toronto.*

This paper will be published in *Art and Archaeology*.

3. Dr. Lindley Richard Dean, of Princeton University, *Some Latin Inscriptions from Corinth.*

No abstract of this paper was received.

4. Mr. B. H. Hill, of the American School of Classical Studies, Athens, *Recent Excavations at Corinth.*

No abstract of this paper was received.

5. Mr. E. H. Swift, of the American School of Classical Studies, Athens, *Sculptures from Recent Excavations at Corinth.*

No abstract of this paper was received.

6. Mr. C. Q. Blegen, of the American School of Classical Studies, Athens, *Prehistoric Sites at Corinth.*

No abstract of this paper was received.

7. Mr. Philip B. Whitehead, of Janesville, Wisconsin, *The Mediaeval Basilica of S. Croce in Gerusalemme in Rome.*

The paper gave a brief outline of the history of the church, which may be summarized as follows. The Sessorian Palace, built in the early part of the third century, belonged in the fourth century to Constantine, who dedicated in it a chapel in honor of the relics of the passion. This chapel is now known as the chapel of S. Helena. The present basilica occupies a large hall of the palace, which was converted into a church at a later date by the addition of an apse. In the twelfth century, this hall-church was divided into aisles and given the typical basilica form. At the same time some very interesting frescoes were painted, which have been recently discovered. Slides were shown of the ground plan and some of the details still in existence of the twelfth-century basilica. A slide was also shown of a drawing made by the speaker giving a reconstruction of the church as it was before being restored in the barocco style of the eighteenth century.

THURSDAY, DECEMBER 30. 9.30 A.M.

1. Mr. E. T. Dewald, of Princeton University, *The Arch of Aragon.*

No abstract of this paper was received.

2. Professor George B. McClellan, of Princeton University, *Serpotta, an Italian Sculptor of the Baroque Period.*

Serpotta marks the dividing line in Sicilian art between the nearly extinct Renaissance and the growing exaggeration of the Baroque. In him the spirit of the Renaissance still lives to moderate and to modulate the exuberance of the Rococo. The material which he used was a peculiarly hard stucco which lent itself extraordinarily well to the finest and most detailed modelling and to extreme delicacy of line, and took a very high lustrous glaze, much like that which modern decorators call "egg-shell finish." It has proved itself extremely durable, and while there has been some restoration, fortunately most of his work is as he left it. Although almost all of his works are in the churches of Palermo, Serpotta is practically unknown, for nothing has been written about the man and scarcely anything about his work. He was an artist of great ability, of certainty of touch and breadth of vision. He was a great decorator, a great maker in white and gold, but he went beyond mere decoration. His portraits of women, his few studies of men and his innumerable studies of children, show that had he been so fortunate as to live and to work in more congenial and inspiring surroundings, he would have gone much further. His life was a struggle against the ignorance and bad taste of his city and his day, yet he rose superior to his environment. After his death his son and his followers struggled to keep alive the inspiration of the master, but what they had to give was a mere vague shadow of the master's spirit, and the master's light soon went out never to be rekindled. Serpotta is an artist worthy of all consideration for those who study decoration today.

3. Mr. George H. Edgell, of Harvard University, *A Youthful Portrait by Van Dyck in the Fogg Museum, Cambridge.*

This paper discussed a portrait of a Flemish nobleman, by Van Dyck, bought in April, 1915, by the Fogg Museum of Harvard University. The painting bears the date 1620, and is ascribed to Van Dyck on stylistic grounds. The attribution is sustained by comparison of this portrait with others done by the artist at this period, when he was twenty-one years old, and is approved by Dr. Wilhelm Bode, and others. The coat-of-arms in one corner of the painting reveals the fact that the nobleman represented is Alexander Triest, Baron of Auweghem, near Oudenarde.

4. Mr. Paul J. Sachs, of Harvard University, *A Newly Acquired Sasseta Lent to the Fogg Art Museum, Cambridge.*

No abstract of this paper was received.

5. Mrs. E. H. Dohan, of Philadelphia, *Four Covered Bowls from Orvieto.*

No abstract of this paper was received.

6. Dr. C. D. Lamberton, of Western Reserve University, *Influential Elements in Early Christian Art.*

The sepulchral element in the art of the Roman catacombs has been over-emphasized in most criticisms, for the frescoes, while serving as the decora-

tions of tombs, reflect the consensus of Christian hope and faith and the quality of Christian character, rather than express a single aspect. This is seen in the decidedly intimate treatment accorded the person of the Saviour, a reminiscence of the spiritual influence of apostolic days, in which the eternity of the life afforded by the gracious Christ takes into account present existence as well as the hope of the future. The Hellenistic basis in early Christian art is abundantly recognized. Indeed, the instances are numerous in which the art canon was stronger than ecclesiastical tradition, as, for instance, the variation in the number of Wise Men in the Epiphany—and in the number of baskets of loaves in the Multiplication themes. The Hellenistic quality is seen especially in the development of symbolism. It resulted in the production of static forms; monotonously repeated, but exceedingly rich in symbolic thought. And here is observed the real tie that unites the early period with the Byzantine, periods which are so different in most respects, especially in technique, since in the Byzantine we have an abundant richness and glory produced by plain display and in the Roman frescoes little beyond blocks of color that exist simply because the work is in the nature of painting. But in the one case the limitation of form resulted in an accession of symbolic sentiment; in the other case, the restraint of style resulted in a concentration of color and evident effect. The same effect of richness is produced in both periods by the same cause, an element that is characteristic of the spirit and art of Hellenism. Of purely oriental elements there is insufficient evidence, for the period under consideration, except as associated with the Hellenistic, but western influence is manifest in an attempt to introduce ecclesiastical or liturgical, rather than symbolic themes, in a determined attempt at realism in expression, and in the painting of a large number of portraits.

7. Mr. S. B. Murray, Jr., of Wells College, *Plans of Some Pagan and Christian Buildings in Syria.*

In the *Revue Archéologique* for 1906, Mr. H. C. Butler calls attention to the striking similarities in plan between the early Christian churches in Syria and the Tychaion at Iṣ-Ṣanamēn, dated 192 A.D. An examination of the Hellenistic temples of Syria built before the Tychaion shows that many of them have this peculiarity in plan; the *naos* has an *adyton* at the inner end. In the temple at Burdj Bākīrāh, of 161 A.D., this *adyton* runs the full width of the *naos*, and its position is marked on the exterior by a pilaster on the *naos* wall. In the temple of Zeus at Kanawāt, dated, by the style of the architecture, in the latter half of the second century, a more developed form occurs. The *adyton* is flanked on either side by a smaller chamber, corresponding to the *prothesis* and to the *diaconicon* of the Christian church. The so-called Jupiter temple at Ba'albec shows another example of this threefold division of the inner end of the *naos*, and the floor of that part of the *naos* is raised above that of the rest and a "crypt" formed below. Finally, at Kanawāt, in the group of buildings known as the Serāyā, the Christians deliberately copied the plan of an earlier pagan building having the threefold division at the end of the *naos*, and erected a church on the same spot, being unable to use the pagan structure because of improper orientation. Furthermore, they entirely ignored an earlier building of pagan "basilica" plan which forms part of the same group. It would seem then that, at least so far as Syria is concerned,

the plan of the Hellenistic temples had a most decided influence upon the plan of the early Christian churches.

8. Mr. John Shapley, of Brown University, *Origin of the So-called Mausoleum of Galla Placidia.*

No abstract of this paper was received.

THURSDAY, DECEMBER 30. 2.30 P.M.

*Joint Session with the American Philological Association*

1. Professor P. Van den Ven, of Princeton University, *The Monuments of Antioch in the Byzantine Literature.*

In the first centuries of the Christian era, Antioch as well as Alexandria and the Greek cities of Asia Minor had an important part in the development of Hellenistic and early Byzantine art, strongly influenced by many oriental elements. In those cities originated the great artistic wave which covered Constantinople and the western part of the Mediterranean world from the fourth to the sixth century A.D. and even later. Unfortunately, to appreciate the art in the Syrian metropolis, we are reduced to the information gathered from texts, for the monuments are practically all under ground. Those texts have been studied by Otfried Müller in his *Antiquitates Antiochenae* (1839) and in an article of Förster in the *Jahrbuch des Deutschen Archäol. Instituts* (1897). The basis for the study of the topography and monuments of Antioch is John Malalas' *Chronicle*, of the sixth century, about which many difficult problems remain to be solved. That invaluable source of information is to be supplemented by Procopius' *De aedificiis*, Evagrius' *Ecclesiastical History* and more still by Libanius' *Oratio Antiochicus*. To these sources, which have been exploited to a great extent, one ought to add a new document, the *Life of S. Simeon Stylites the Younger* (died about 592), written in the first half of the seventh century by Arcadius, one of Simeon's disciples. Simeon's life was spent in the vicinity of Antioch and he had a part in many events which took place there between 525 and 592, and the biographer mixes with his narrative a good many observations concerning the topography and some monuments of the city. I have undertaken the publication of that curious text from the five extant manuscripts, and when the war broke out, it was being printed with many other Greek lives of Stylites, which were to be published by the Bollandist Father Delehaye. Unfortunately, the publication has now been stopped because the printer is living in a town very near to the front.

2. Mr. Roger S. Loomis, of the University of Illinois, *Treatment in Art of Alexander the Great's Celestial Journey.*

The legend of Alexander the Great's ascent to heaven in a basket or throne drawn by gryphons and of his forced descent to earth again, has its origin in Oriental legends of the Persian king Kai Kaus and the Babylonian hero Etanna. It first appears as a part of the Alexander tradition in a ninth century abecedarium poem in Latin, and then in the *Historia de Proeliis*, and from that source spread into the many versions of the Alexander cycle of romances. As an artistic motif, the figure of Alexander flanked by his gryphon team enjoyed a



remarkable popularity quite independent of other incidents in the Alexander tradition. Appearing first in the Byzantine empire in the tenth century, the *motif* traveled eastward, northward, and westward, and is found in the work of places as far distant as Mesopotamia and the English West Country. Not till the decay of mediaeval traditions in the sixteenth century does this *motif* disappear. The frequency of its occurrence in the decoration of churches obliges us to look for a symbolic meaning. In some cases it is probable that the Celestial Journey was interpreted as a laudable striving toward heavenly things. But strong evidence points to an ecclesiastical tradition which regarded the episode as a type of Lucifer's attempt to seat himself on the throne of God and of his fall.

This paper will be published in full in a later number of the JOURNAL.

3. Miss E. H. Haight, of Vassar College, *Unpublished Illustrations of Apuleius' Story of Cupid and Psyche*.

No abstract of this paper was received.

4. Professor R. W. Husband, of Dartmouth College, *The Year of the Crucifixion*.

No abstract of this paper was received.

5. Mr. G. C. Pier, of New York, *Personal Ornaments of the Ancient Egyptians*.

If we except the "collar," an ornament of true "dog-collar" type, the *wesekh* is the earliest form of necklace to become nationalized by the ancient Egyptians. By the Fifth Dynasty the "dog-collar" has almost vanished and we then find the *wesekh* with or without the "yoke" the one seemingly essential ornament of the upper classes. The stela of Mena, dating from the Fifth Dynasty, shows us the collar and *wesekh* together upon the neck of a woman, and the *wesekh* alone upon the broad chest of the man. The man's ornament is finished with lotus-petal pendants, a form more often reserved for women. As a rule, men wore a simpler type of *wesekh*, a type composed of horizontal bands of semi-precious stone cylinders held in place by bars of the precious metals. At times, below the *wesekh*, men wore a chain of round or cylindrical beads, to the centre of which was attached a curious ornament which may well have held that very personal and precious possession of the Egyptian, his seal-cylinder. If we study the tablet of Mena, we see that his children wear at their necks a combination *wesekh* and yoke, an ornament apparently reserved for children. This type of *wesekh* early disappears. Judging by the monuments the yoke appears to have come in early in the Old Empire. At that date, it is worn by women and children alone. It becomes an essentially feminine ornament at the close of the Old Empire and throughout the Middle Empire. A striking example is furnished by the wall-paintings at el-Bersheh, where one of the little daughters of Thutiy is so adorned. This yoke ornament becomes one of the most common ornaments of the Egyptian noble toward the close of the New Empire, and thereafter down through the reigns of the Saitic kings. A detail from the walls of Seti's temple at Abydos shows this ornament as it had become changed and modified throughout the centuries. We see

that the somewhat elongated pendant of the Old Empire has now resolved itself into a true pylon, as indeed it had prior to the Middle Empire. The jewelled pectorals of the Amenemhats and Usertesens are superb examples of the new type. The gem-encrusted and open-work pylon of Ramses II and the gold pylon pendant of Ramses III are survivals of this Old Empire yoke form. The monuments and extant examples show us that the *wesekh* was commonly composed of a series of five or six rows of cylindrical amethysts, carnelians, sards or Egyptian emeralds, interspersed with beads and bars in the precious metals. From evidence supplied by the monuments themselves, we may infer that glazed pottery *wesekh* were very common; precious materials, of course, being reserved for the royal household, or the more exalted nobles. The Lady Nofrit, of the close of the Third Dynasty, wears the type of *wesekh* seen upon the monuments from the Old Empire to the days of Nectanebo. The type is again shown in the charming Old Empire group of Hapnuka and his wife. Here, indeed, we may remark both the banded *wesekh* and seal—if such indeed it is—the common ornament of the man, and the bandless but petal-fringed *wesekh* of his wife, which we may call the woman's type. We can imagine how frail the little pendants must have been, and it is not surprising to find that the Egyptian jeweller soon discovered that an outer band of beads was necessary to hold the delicate lotus petals in place. So, early in the Middle Empire, if not before, the *wesekh* assumed the form worn by Prince Khamhat, of the Eighteenth Dynasty. The Twelfth Dynasty sard, emerald and gold *wesekh* of Princess Ita-urt is a modified Old Empire model. The jeweller has enclosed the petals, yet added a band of hard stone (carnelian) drops. The Seventeenth Dynasty gold *wesekh* of Queen Ahotep is quite unique in style, yet, in its general outlines, it is the *wesekh* of old. By this time we see the conventional cylinders giving way to freer designs, such as the representation of the coursing animals, as here—a design so commonly found in the bronze and ceramic decoration of the Near and Far East almost to our own day. Queen Thiy's gem-encrusted gold *wesekh* is composed of lotus petals and *nofer* or "happiness" signs, each ornament being of unusually bold design. It is quite unlike the weak and imitative workmanship of Ramesside date, as evinced in the gold and sard *wesekh* from Zagazig and the emerald, gold and gem-encrusted *wesekh* from Tell Basta. The *wesekh* may be said to have found its fullest and ripest expression under the later Eighteenth Dynasty kings. Here it finally resolves itself into what appears to have been a sort of jewelled tippet or cape, an ornament of astonishing beauty and richness of material. Both Akhenaton, Harmhab and their queens, are often represented as wearing a garment of this type. In lieu of extant examples it is perhaps best illustrated by the *wesekh* inlaid upon the gem-encrusted and gilded coffins of Iuya and Thuya, parents of Queen Thiy, now in Cairo museum.

The following abstracts of papers announced, but not read, have been received:

1. Professor W. N. Stearns, of the University of North Dakota, *The Egypt Exploration Fund: A Plain Statement of Present Needs.*

For the season 1915-16 the Egypt Exploration Fund essays under great difficulties new activities. Work the past season was carried on at Ballabys, where was found a nineteenth century cemetery. The new site proposed for 1916-17 is Tel Tibulleh, east of the Nile and in the district of Dakhaliah. Tel Tibulleh covers a large area and will require extensive diggings. The soil in places is very wet and, doubtless, pumping will be necessary to the carrying on of the work. The name of the ancient city is lost, but large blocks of stone scattered about indicate some place of no small consequence. The Cairo museum has gold jewelry, pots, and large statues from the spot, and the site is expected to be rich in objects of the Saite and Ptolemaic periods. Mr. Edgar, Inspector for the Department of Antiquities for Lower Egypt, is especially anxious for this site as one of the most promising locations under his jurisdiction, and one as yet untouched by the spade. What is done must be done quickly. Some years since, this land was sold. The rights of excavation retained by the government will expire in the spring of 1917. Naturally the burden of labor, the present season, must fall on the American members of the Fund. Though in the eastern Delta, it is believed that, despite rumors, the undertaking may be carried on without interference. The concession is a large one and will require about \$5,000 for its consummation. The best of trained superintendence is available. Mr. Wainwright, for example, has worked many years under the direction of Professor Naville and will bring to the task superior skill and experience. For the digging men can be secured for twenty to thirty cents a day. Twenty-five dollars will secure a man's services during an entire season. There is also an economic phase to this question. War has cut off many avenues of support and hundreds are in need of work to secure the bare necessities of life. These men are not landed proprietors, nor the holders of even small farms. They are villagers and need daily labor for food for themselves and families. One morning, for instance, when the camp woke up, there were two hundred or more men seated on the sand before the tents, waiting for a possible chance to work. They had come from a distant village and had travelled all night. The pallor of their cheeks bespoke their need, but there was no money, and, consequently, no work. Twenty-five dollars will support one of these men and his family for an entire season, will secure valuable service in the interests of science, will redeem one of the finest opportunities in Egypt, and may add to our store knowledge of incalculable value.

2. Miss Georgiana G. King, of Bryn Mawr College, *A Note on the So-called Horse-Shoe Arch in Spain.*

There are Roman steles of the second century which use this form for a decoration. There are Visigothic churches, in the Asturias and elsewhere, of the seventh to ninth century, which use it. Three churches in Leon show the work of Cordovan builders—S. Miguel de Escalada, Santiago de Peñalva, and S. Tomás de las Ollas. This all is Mozarabic work and shows how Spanish architecture might have developed without the intrusion of Cluny and Cîteaux. With all the Moorish work and then all the Mudejar, the Spanish imagination accepted the form as a matter of course and permitted it to appear, as an element of design or as a mere optical illusion, till 1536 at least.

FRIDAY, DECEMBER 31. 9.30 A.M.

Joint session, at Washington with the Nineteenth International Congress of Americanists, Section I, Anthropology, Second Pan-American Scientific Congress, and Affiliated Societies.

1. Sylvanus G. Morley, of the Carnegie Institution, Washington, *The Rise and Fall of Maya Civilization in the Light of the Monuments and the Native Chronicles*.

2. Herbert J. Spinden, of the American Museum of Natural History, New York, *Recent Progress in the Study of Maya Art*.

3. Alfred M. Tozzer, of Harvard University, *The Chilam Balam Books and the Possibility of Their Translation*.

4. Ellsworth Huntington, of Yale University, *Climatic Influences on the Southern Maya Civilization*.

5. Edward H. Thompson, of the Peabody Museum, Cambridge, Massachusetts, *Recent Excavations in Northern Yucatan*.

6. Raymond E. Merwin, of the Peabody Museum, Cambridge, Massachusetts, *Excavations in the Department of Peten, Guatemala*.

7. Marshall H. Saville, of Columbia University, *Archaeological Studies in Northwestern Honduras*.

8. Adela C. Breton, *The North Building of the Great Ball Court, Chichen Itza, Yucatan*.

9. Stansbury Hagar, Brooklyn Institute of Arts and Sciences, *The Maya Zodiac of Santa Rita*.

FRIDAY, DECEMBER 31. 2 P.M.

1. Sylvanus G. Morley, of the Carnegie Institution, Washington, *The Holun as the Principal Chronological Unit of the Old Maya Empire*.

2. Luis Montané, of the University of Havana, *Découverte des premières Sépultures Indiennes de Cuba*.

3. Robert T. Aitken, *Porto Rican Burial Caves*.

4. H. Newell Wardle, of the Academy of Natural Sciences, Philadelphia, *Incense Burners from a Cave near Orizaba*.

5. E. A. Hooton, of Harvard University, *The Archaeology and Physical Anthropology of Tenerife*.

6. H. G. Spaiden, of the American Museum of Natural History, New York, *On the Origin and Distribution of Agriculture in America*.

Abstracts of the papers read in Washington will be published in the Transactions of the Nineteenth International Congress of Americanists.

## SPECIAL MEETING OF THE ARCHAEOLOGICAL INSTITUTE OF AMERICA

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AUGUST 2, 3, 4, 5, 11 and 12, 1915

IN connection with the Panama-Pacific Exposition, and in conjunction with the American Association for the Advancement of Science, the Archaeological Institute of America held a Special Meeting for the reading and discussion of papers in San Francisco (including the University of California and Stanford University), Monday, Tuesday, Wednesday and Thursday, August 2, 3, 4 and 5, 1915. Four sessions for the reading of papers were held, and at two evening meetings two addresses on archaeological subjects were delivered.

An Adjourned Session of this Special Meeting was, on invitation of the President of the Panama-California Exposition, held in San Diego, California, on Wednesday and Thursday, August 11 and 12, 1915. Four sessions for the reading of papers were held. The abstracts which follow were with few exceptions furnished by the authors.

MONDAY, AUGUST 2. 7.45 P.M.

*Session at the Exposition Grounds, San Francisco*

1. Professor Eugen Neuhaus, of the University of California, *The Architecture of the Panama-Pacific Exposition*.

The substance of this paper appears in *The Art of the Exposition* (Paul Elder, San Francisco, 1915).

TUESDAY, AUGUST 3. 10 A.M.

*Session at the University of California*

1. Professor H. R. Fairclough, of Stanford University, *A Problem in Virgilian Flora*.

The substance of this paper, under the title 'The Tinus in Virgil's Flora' is given in *Classical Philology*, Vol. X, No. 4, October, 1915.

2. Professor Oliver M. Washburn, of the University of California, *A Proposed Restoration of the East Pediment of the Parthenon.*

No abstract of this paper was received.

3. Mrs. Harry L. Wilson, of the Museum of New Mexico, *Life Forms in the Pottery of the Southwest.*

This paper is based on a study of a large collection of pottery, purchased by Dr. Hewett for the San Diego Exposition, from an excavation near Houck, Arizona. The specimens show so many varieties of the duck that one is led to believe that the Gila Valley must at one time have been a sportsman's paradise. The mallard and teal have been positively identified. We must also suppose that there was once a "manufactory" in the village, for so many jugs, cups, and vases of the same general type and size would otherwise be most unusual.

4. Mr. Carleton M. Winslow, Architect, San Diego, *Spanish Colonial Architecture at the Panama-California Exposition.*

The architectural key-note of the Panama-California Exposition is called the Mission Style, which is more an expression than an actual fact. The architecture of the Exposition, however, expresses, in general, the genealogy or past of this so-called style, and the paper attempts to exemplify this. Beginning with examples of the Byzantine, the pictures show the progress of building design and ornamentation, through Moorish, Italian, Spanish Plateresque, Middle period and Churrigueresque, and the Mexican to the so-called Mission style and the design of the Fair buildings, paralleled with pictures of buildings and details of the Exposition. The influence of the Franciscans in New Mexico was also briefly touched upon, exemplified in the New Mexico Building, and the work of the Pueblos and Hopis in a purely "American" style, as shown in the Santa Fé exhibit.

#### TUESDAY, AUGUST 3. 2 P.M.

1. Mrs. Zelia Nuttall, of the Peabody Museum, Harvard University, *Ancient Mexican Spindle-whorls.*

Mrs. Nuttall placed on exhibition her unique collection of type-specimens of spindle-whorls of clay, the work of the women of Ancient Mexico, who were the potters. The high degree of artistic skill they developed is demonstrated by the astonishing variety of forms, designs, and technique they used. Most of the specimens were collected in the Valley of Mexico from burial places near the great centres of pottery production at Cholula and Texcoco. By means of the collection (of 391 specimens), it is possible to follow the evolution of the whorl from a rough dish of clay into a thing of beauty, artistic in form, colour, and decoration. The fact that spinning and weaving were favorite occupations of the women of the ruling caste in Ancient Mexico probably accounts for the exceptional and superior character of these whorls, surpassing any found on the prehistoric or historic sites of the Old World.



2. Dr. Hector Alliot, of the Southwest Museum, Los Angeles, *Aspects of Neolithic Culture of the Santa Barbara Channel Islands, California.*

The recent expedition of the Southwest Museum to San Nicolas Island seems to have established more definitely than heretofore the fact that the mainland habits and traditions of the more advanced tribes of both the north and the south were merged in those of the Islanders of that time. Through numerous illustrations were shown the artistic perfection of the steatite vases, realistic animal sculpture, the diversity of arrow points and spear heads and abalone fish-hooks and ornaments. The more important contribution to the subject was the first record of a new form of burial, discovered on the northern end of San Nicolas Island, in a vast cemetery which, owing to its inaccessibility, had not before been explored. This type of burial, different from the general one of the mainland and from the accepted form of island mortuary custom, points to an accretion of the customs of the Yurok Indians of Northern California while retaining many distinctive features of the southern tribes. Its variation from the more ancient customs and the adopted Spanish practices of historical times, would indicate that this well defined type marked the highest development of aboriginal mortuary practice by the inhabitants of the Channel Islands before the discovery by Cabrillo.

3. Dr. Edgar L. Hewett, Director of the American School of Archaeology, *Latest Work of the School of American Archaeology at Quirigua, Guatemala.*

No abstract of this paper was received.

WEDNESDAY, AUGUST 4. 1.30 P.M.

*Session at Stanford University*

1. Dr. J. J. Van Nostrand, of the University of California, *The Imperial Cult in Spain during the First Century, A.D.*

No abstract of this paper was received.

2. Professor Jefferson Elmore, of Stanford University, *The Professiones of the Heracleian Tablet.*

This paper will be published in full in *Roman Studies*.

3. Professor William E. Gates, of the School of Antiquity, Point Loma, California, *The Unpublished Material in the Mayan and Southern Mexican Languages*, read by Professor H. R. Fairclough.

By the above title I mean to cover geographically and culturally the field of the generally known Maya race; next the other civilized centres to the west of that field, such as the Zapotec of Oaxaca, and the Tarascan of Michoacan; and finally the very numerous minor dialects either related to these main stocks, or else unmistakable remnants, linguistic islands, of older races, pushed off into the corners and out of the way districts. The entire region bears the plain marks of successive race waves and changes far back of our

illuminated circle of dated history. We shall certainly uncover it more and more in the future; but for now our evidences are almost wholly those of comparative linguistics, helped out a very little by a few traditions or possible cultural survivals, little studied and less understood—and by a moderate amount of located artifacts, such as the “shoe-vases” of Nicaragua. The writer has collected a vast amount of material, either by the purchase of manuscripts or by the copying of manuscripts, in various American and European libraries. The possibilities, the very existence of this literature and what it means, have been completely buried and forgotten. Besides, it was a physical impossibility five years ago, while the material, now gathered all together, was scattered everywhere. When we really come hereafter to know the Mayance races, through their language, their architecture, art, science and, let us hope, through their hieroglyphic writing, also their history, we shall put them not below the plane where we now place the Greeks, the Etruscans, and the Egyptians.

4. Professor George Hempl, of Stanford University, *The Trilingual Glosses—Hittite, Assyrian, Sumerian.*

In a paper published in the transactions of the American Philological Association last year, it was shown that the speech of the Ancient Hittites, whose empire extended over Asia Minor, Syria, and Northern Mesopotamia, and was at the height of its power in the second millennium before Christ, was Greek, and that, therefore, this remarkable people were Greeks, and their great civilization a Greek civilization. It has for some time been known that the Hittites transmitted the culture of the Orient to the Greeks of the Aegean, but their racial affinities were unknown. It would now appear that at least the Hittite Greeks descended from central Europe to Mediterranean lands as early as the fourth millennium before Christ, in other words, much earlier than it has hitherto been supposed that men of Greek stock had come south. The radical character of these discoveries has hitherto led philologists and archaeologists to regard them with extreme scepticism. It is, therefore, of particular interest that all that the writer has claimed as to the Greek character of Hittite speech is convincingly substantiated by certain ancient tablets containing Hittite translations of Sumerian and Assyrian words. These tablets were used by young Hittites training to become scribes. As the Hittite words on the tablets coincide in form and meaning with the words found in later Greek, the identity of Hittite and Greek is established beyond controversy.

WEDNESDAY, AUGUST 4. 7 P.M.

*Session at the Café St. Germain, San Francisco*

1. Professor George Bryce, of Winnipeg, *Ghiberti's Gate of Paradise in Florence.*

No abstract of this paper was received.

THURSDAY, AUGUST 5. 10 A.M.

*Session in the San Francisco Institute of Art*

1. Professor Osvald Sirén, of the University of Stockholm, *The Relation of Religion to Art in Antiquity and the Middle Ages.*

The highest art is not the servant of either national or religious ideas; strictly speaking it owes allegiance to no other power than that of the artist's creative imagination, but it might to some extent be the expression of the same inspiring forces that manifest themselves through religious or national life. Art and religion are twin sisters, branches of the same tree, for they draw their nourishment, not from the outer world, but from an inner emotional reality. They both reveal something beyond the outer appearances, something we might call the soul of things. That which is important for the artist as for the mystic is not what he experiences through his senses, but that which he lives through, whether it be or be not concerned with the outer world. The objective world has no value for him but as a symbol, or a means by which to stir to action his creative imagination. This may appear a little strange in our day, but it was not always so, for in former times Art and Religion evolved side by side, as parallel lines of expression for man's soul-life. We can see this correlation most distinctly in the classic period in Greece. (This statement was further on proved by the explanation of some Greek sculptures and by quotations from some philosophers, like Plato.) Considered from a philosophical point of view, the classic art of Greece may be said to have attained an ethico-religious value also from the fact that it embodied the same fundamental principles that were considered essential to virtue. The basis of expression for both goodness and beauty was thought to be measure and harmonious balance. Most Greek authors of the classic period who discuss these questions return to this fundamental concept. Already Democritus strikes this keynote. He declares beauty to be perfect measure free from deficiency or excess: the ethical idea is thus embodied in an esthetic formula. For Plato, as we know, beauty and moral good were most closely allied, the essential principle in both was a certain measure, the perfect harmony of proportion. That Christianity introduced new subjects in art is of less importance than that it gradually permeated the emotional life, preparing the way for new artistic evolution. This occurred first in the East where the esthetic soil had been more thoroughly loosened and the new seed not so often trampled by the invasion of the barbarians. Here was evolved the abstract formula that contained the solution of the new problem—an art that with its whole being broke with the objective naturalism of antiquity, and in place thereof sought the expression of subjective emotional values in decorative symbols, born of imagination.

2. J. Murray Clark, K. C., of Toronto, *Notes on the History of Mining Law.*

This paper was read by title. No abstract was received.

3. Dr. Martin A. Meyer, of San Francisco, *Sanctity of First Born.*

The immolation of children was a common practice among the early Hebrews. The first born was looked upon as a particularly desirable offering, as various passages in the Bible show. Among orthodox Jews the institution of the redemption of the first born is still observed in connection with the Passover. This was originally a spring festival celebrating the rebirth of nature. Because of the practice of sacred prostitution the first born came to be looked upon

as the child of the god and so to be sacrificed to the god; and for the same reason descent was counted in the female line. Later ages modified the savage rites, the Pentateuchal legislation showing the latest stages.

4. Professor William F. Badé, of the Pacific-Theological Seminary, *The Jewish Sabbath in the Light of Babylonian Archaeology*.

The term *shabbatum* goes back in origin to the Sumerians. The Babylonians applied it to the full-moon period which fell in the middle of their months. Among them it was a propitiation day, but not a day of rest. Being the day of the full moon it occurred but once a month. The early Israelite Sabbath, in all probability, was also a full-moon festival, devoted to joyous feasting. The hostility manifested toward it by the preëxilic prophets may then be accounted for on the ground of its association with the astral religion of the Babylonians, as well as its Canaanite associations. About the time of the Exile (586 B.C.) a seventh day of rest, freed from association with moon phases, was inaugurated and called the Sabbath, although it had little in common with the earlier institution under that name. The writer of the first chapter of Genesis (P) arranged the creative acts to fit the scheme of a weekly cycle which in his day was already an established custom.

The paper appears in full, as part of the chapter on 'The Origin of the Decalogue' in *The Old Testament in the Light of To-day*, published November, 1915, by the Riverside Press (Houghton Mifflin Company).

5. Professor Edward A. Wicher, of the San Francisco Theological Seminary, *A New Argument for Locating Capernaum at Khan Minyeh*.

The question of the site of Capernaum is the most important of all topographical problems in Palestine, because it is so intimately connected with the environment of the ministry of Jesus. The key to the solution is to be found in an ancient Roman aqueduct running northwards from Khan Minyeh, and in the spring with which it is connected. The aqueduct, still in use in 1601, brought the water to Capernaum and the plain of Gennesaret beyond. This plain is described by Josephus, *Wars*, III, 10, 8, who tells us that it was watered from a most fertile fountain called Capernaum. It is natural to infer that the town of Capernaum, which was near the Plain of Gennesaret, grew up not far from the spring. Khan Minyeh is close to the plain, Tell Hum is not. There are numerous secondary reasons for regarding Khan Minyeh as Capernaum, one being that the ruins on the summit of Tell-el Oreimeh are those of an important place and are more extensive than those of Tell-Hum. Many passages of the Gospels bring Capernaum into close association with mountains, and Christ's reference to her being "exalted unto heaven" points in all probability to a conspicuous elevation. Now Tell-el-Oreimeh rises some 330 feet above the level of the sea of Galilee, and was crowned with buildings which would give it something of the appearance of an acropolis, from whatever point on the lake it might be viewed.

6. Professor Roy C. Flickinger, of Northwestern University, *Archaeology versus Estheticism in Dramatic Criticism*.

The paper will form a chapter in the writer's forthcoming book, *The Greek Theatre and the Drama*, to be published by the University of Chicago Press.

7. Dr. Edgar L. Hewett, Director of the American School of Archaeology, *Archaeology at the Panama-California Exposition*.

No abstract of this paper was received.

An Adjourned Session of the Special Meeting, in accordance with the invitation of the President of the Panama-California Exposition, was held at San Diego, California, when the following papers were presented.

WEDNESDAY, AUGUST 11. 8 P.M.

*Session at Open Air Greek Theatre, Point Loma*

1. Professor George Hempl, of Stanford University, *New Light on the Earliest History of Mediterranean Civilization*.

Professor Hempl gave a statement of the historical results of his Mediterranean studies during the past seven years. The important points were these: Venetic and Etruscan turn out to be Italic dialects of the Q-type and closely related to Latin. Old Sicilian, as Freeman prophesied, is practically a dialect of Latin. Old Sabellic is a P-dialect, related to Oscan and Umbrian. Hirt once called attention to the fact that the Italic Q-dialects are so different from the P-dialects that we must assume that the two peoples were long separated from each other before they became close neighbors in Italy. Tradition tells us that the Romans came from the Troad, in northwestern Asia Minor, that the Veneti came from Paphlagonia, which lay east of the Troad; and that the Etruscans came from Lydia, that is, from south of the Troad. We also have evidence of the presence of Etruscans in Cyprus, Crete, Lemnos, and on other Aegean coasts. These historical facts, taken in connection with the new linguistic finds, make it very probable that, while the P-branch of the Italic race descended southward from central Europe into Illyria and thence into northeastern Italy, the Q-branch made its way to the southeast through the Balkan peninsula and across to Asia Minor and the Aegean islands, as so many other Indo-European peoples did before and after their time. Later, some new movement of the peoples caused various representatives of the Q-stock to leave their eastern homes and make their way to Italy, bringing with them the art of writing and other elements of the civilization they had acquired in the East. In Italy they became neighbors of their cousins of the P-stock, who had advanced little, if at all, beyond the primitive civilization that they had brought down from central Europe, and to whom the Q-peoples now extended their higher culture.

The pictographic writing of the Minoans and Hittites Professor Hempl found to be iconomatic, and not ideographic as generally believed. Early Hittite and early Minoan revealed themselves as Javonian dialects, of the

Attic rather than the Ionic type. Both later gave way to A-dialects, the Javonian Hittite to Doric, which shows long separation from the Doric that we already know. All the cuneiform Hittite that Professor Hempl has examined is Doric Hittite. These facts can be explained only on the supposition that some time in the third millennium Javonian Greeks came down from central Europe, not only into Greece, but also into western Asia Minor and thence into Crete, developing in both countries great civilizations. Later, but much earlier than has been supposed, Greeks of other stocks followed, conquering those who had preceded them, and in some cases destroying the civilization that they found. Dorians overthrew the Javonian Hittites about 1400 B.C. and thenceforth called themselves Hittites, extending the empire over Syria and northern Mesopotamia. All this makes it necessary for us to recast our conceptions of the early history and civilization of Europe and the Near East.

THURSDAY, AUGUST 12. 9.30 A.M.

*Session at Exposition Grounds, San Diego*

1. Dr. Edgar L. Hewett, Director of the American School of Archaeology, *Archaeology at the Panama-California Exposition*.

THURSDAY, AUGUST 12. 2.30 P.M.

1. John Peabody Harrington, of the Bureau of American Ethnology, *Culture Destruction among the Mohave*.

No abstract of this paper was received.

2. Professor William E. Gates, of the School of Antiquity, Point Loma, *H. P. Blavatsky and Archaeology*.

The paper emphasized the importance of archaeology in its relation to human life, the Science of Man. The views expressed are those of the author and also of H. P. Blavatsky, as expressed in her books.

THURSDAY, AUGUST 12. 8 P.M.

1. Professor F. W. Shipley, President of the Institute, *Roman Portrait Sculpture*.

The paper dealt in particular with the development of Roman portraiture, Rome's chief contribution to ancient art, and touched upon the factors which contributed to its wonderful realism and individuality.

It dealt in particular with the identified portraits of significant Romans, such as Caesar, Cicero, Pompey, etc., and a few of the emperors, most celebrated either for their goodness or their badness, and discussed these portraits in relation to the known data in regard to the characters and personalities of the subjects. From the standpoint of individuality, the most striking portraits are those of persons unknown, some of them representing, no doubt, men who were prominent in the life of the Republic, but the majority, persons belonging to the middle classes and to the lower strata of society, the peasant types of the Republican period, and the merchants, tradespeople and freedmen of the time of the Empire. These portraits are of especial interest, since

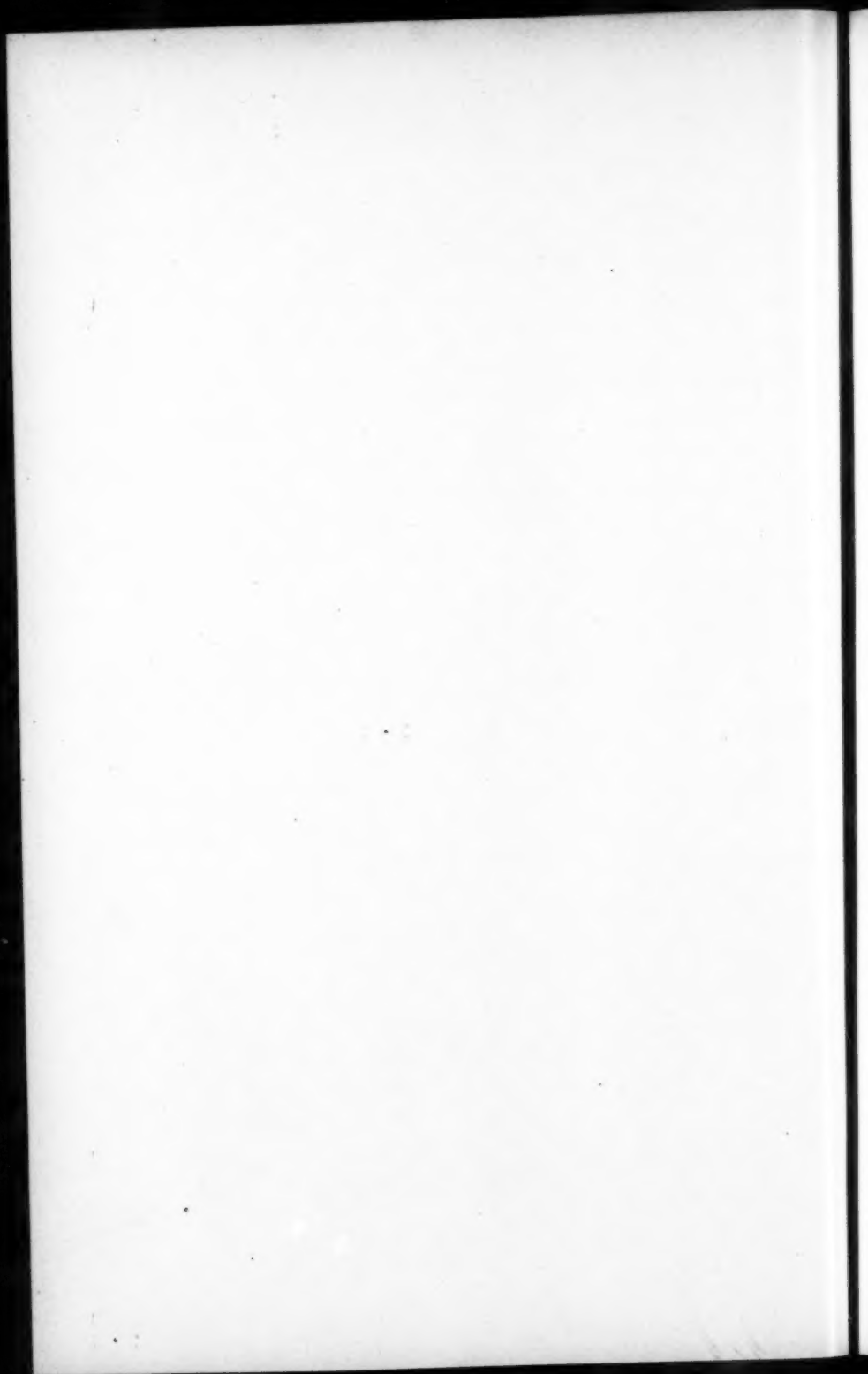


they bring before us with concrete realism the various types of the common people of ancient Rome.

2. Professor George Hempl, of Stanford University, *Minoan Seals*.

The writer undertook to show that the pictographic writing on the Minoan seals is iconomatic, and not ideographic as generally assumed; that the small cross is a final punct, and not an initial punct as taught by Evans, though it sometimes is used both initially and finally, and that the language employed is Javonian Greek of the same type as Attic and early Hittite Greek. The most common group of symbols found on the seals, *door-leg* or *door-leg-silphium*, which Evans calls a "canting badge" (The *door* standing for "keeper" or "guardian," and the *leg* for "leader" or "dux"), furnishes the most frequent spelling of the word *ῥῥος* "stamp" or "seal." Thus, *ῥῥ[ρα]-ῥῥ* or *ῥῥ[ρα]-ῥῥ* *σ[ῥῥος]*, with cumulative spelling of the final *-ῥ*. The word following *ῥῥος* is usually the genitive of the name of an official, or of the name of a class of produce, which is often designated as *γῆρος*, "native," or *ῥῥος* "imported."

The paper will be published in full in the Flügel Memorial Volume by Stanford University.



## ARCHAEOLOGICAL NEWS<sup>1</sup>

### NOTES ON RECENT EXCAVATIONS AND DISCOVERIES; OTHER NEWS

WILLIAM N. BATES, *Editor*

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#### GENERAL AND MISCELLANEOUS

**IM BAULICHT.**—A Gallo-Roman Tumulus.—In *R. Ét. Anc.* XVII, 1915, pp. 277-280, E. and R. MALGET report that in 1912 a Gallo-Roman tumulus was found at Im Baulicht, Luxemburg. During the excavations many minor antiquities came to light including numerous vase fragments with the names of potters upon them, a bronze head of a ram, and many fragments of bronze vessels. No coins were found, but the mound probably dates from the end of the first century A.D.

**NECROLOGY.**—J. R. Aspelin.—The State Archaeologist, J. R. Aspelin, born at Hurinki in 1842, died at Helsingfors May 29, 1915. He was honorary president of the Archaeological Society of Finland. His chief work is on the Antiquities of the Finno-Ugrian North (1877-1884). (*S. R., R. Arch.*, fifth series, II, 1915, p. 75.)

**Giovanni Baracco.**—Giovanni Baracco, a member of the Commissione Archaeologica Comunale di Roma since 1883, died Jan. 14, 1914, aged 85. It was he who presented the Museo Baracco to the city of Rome. (*B. Com. Rom.* XLII, 1914, p. 232.)

**Augusto Castellani.**—Augusto Castellani, who died January 24, 1914, at the age of 85 years, was the son of the famous goldsmith Fortunato Pio Castellani, whose business he continued. He formed a fine collection of ancient jewelry. He discussed the technique of ancient goldsmith's work in several monographs, chief of which is *Della Oreficeria italiana*. He was conservator of the municipal collection of the Capitoline, and one of the first and most active members of the archaeological commission of Rome, founded in 1872. (*S. R., R. Arch.*, fifth series, II, 1915, p. 75, from *B. Com. Rom.* 1914, p. 234.)

**Giuseppe Gatti.**—The secretary of the archaeological commission of Rome, Giuseppe Gatti, was born November 23, 1838, and died at Rome, September

<sup>1</sup> The departments of Archaeological News and Discussions and of Bibliography of Archaeological Books are conducted by Professor BATES, Editor-in-charge, assisted by Professor C. N. BROWN, Miss MARY H. BUCKINGHAM, Dr. T. A. BUENGER, Mr. L. D. CASKEY, Professor HAROLD R. HASTINGS, Professor ELMER T. MERRILL, Professor CHARLES R. MOREY, Professor LEWIS B. PATON, Professor A. S. PEASE, Professor S. B. PLATNER, Professor JOHN C. ROLFE, Mr. JOHN SKAPLEY, Professor A. L. WHEELER, and the Editors, especially Professor MARQUAND.

No attempt is made to include in this number of the JOURNAL material published after December 31, 1915.

For an explanation of the abbreviations, see pp. 123-124.

2, 1914. He was especially versed in Christian epigraphy. He was the author of 125 articles, collaborated in several volumes of the *C.I.L.*, had been director of the excavations in Rome, of the new National Museum, and of the *Bullettino Comunale*. (S. R., *R. Arch.*, fifth series, II, 1915, p. 76.)

**A. E. H. Goekoop.**—The generous giver of funds for the excavations at Ithaca and Tiryns, A. E. H. Goekoop, died at the Hague in the autumn of 1914. He was the author of a work on the Ithaca of Homer, which he believed to be the southern part of Cephallenia. He was not a scholar, but the friend and helper of science. (S. R., *R. Arch.*, fifth series, II, 1915, p. 76.)

**Hermann Heineken.**—Herman Heineken, a young numismatist of great promise, has been killed in battle on the German side (September 9, 1915). He is commemorated by J. MENADIER in *Z. Num.* XXXII, 1915, pp. 174–178. A similar fate has befallen **Max L. Strack** (November 10, 1914). His biography is written briefly by **KURT RÖGLING** (*ibid.* pp. 179–181), who also eulogizes **Karl Menadier** (died December 9, 1914, of typhoid contracted in service in the German army) in the same issue, pp. 182 f.

**G. Leroux.**—On June 9, 1915, Gabriel Leroux was killed in battle at the Dardanelles. He was born at Lyons, February 3, 1879, and, after studying at the École Normale Supérieure and in Paris, was for four years a student at the French School in Athens. He took part in the excavations at Delos where he made a special study of the Hypostyle Hall and published that building (*La Salle hypostyle*) in the official report of the excavations. Other works are a catalogue of the Greek and Italo-Greek vases in the museum at Madrid (1912); *Les origines de l'édifice hypostyle en Grèce, en Orient, et chez les Romains* (1913); and *Lagynos* (1913). In 1913 he became a member of the Faculté des Lettres of the University of Bordeaux. By his death France has lost one of her most promising young archaeologists. (P. MASQUERAY and G. RADET, *R. Ét. Anc.* XVII, 1915, pp. 294–298; also M. COLLIGNON, *R. Arch.*, fifth series, II, 1915, p. 73.)

**Jean Maspero.**—Jean Maspero, the son of the great Egyptologist, was killed February 18, 1915, aged 28 years. His special field of work was Egypt in Byzantine times, and in this field he had already achieved distinction. (S. R., *R. Arch.*, fifth series, I, 1915, p. 178.)

**P. N. Papageorgiou.**—The distinguished Greek philologist, palaeographer, and epigraphist, P. N. Papageorgiou, died in January, 1914. He was born at Salonica in 1859. (S. R., *R. Arch.*, fifth series, II, 1915, p. 240.)

**Gian Giacomo Porro.**—Dr. Gian Giacomo Porro was killed in battle, August 28, 1915. He was born in Turin, January 11, 1887, and graduated from the University of Turin in 1909. He was the son of the astronomer, Francesco Porro. In 1911 he joined the Italian archaeological school at Athens, took part in the excavations at Gortyna, and in the exploration of the islands of Rhodes, Syme and Cos. In 1914 he went to Cyrene on an archaeological mission, and on his return was made inspector at the museum at Cagliari. He assisted Taramelli in the exploration of the grotto of S. Michale at Ozieri. He had published thirteen articles. (*Cronaca delle Belle Arti*, II, 1915, pp. 70–72; fig.)

**Clon Stephanos.**—The first director (1886–1913) of the anthropological museum of the University of Athens, Clon Stephanos, died at Athens, January 24, 1915, aged 60 years. In 1874 he published a memoir on the antiquities and inscriptions of Syra, and in 1884 a work on Greece from the natural, ethno-

graphic, anthropological, demographic, and medical points of view. From 1903 to 1910 he was in charge of researches among the prehistoric remains in the Cyclades. His special interest was somatic anthropology. (S. R., *R. Arch.*, fifth series, I, 1915, p. 180.)

**Rudolf Weil.**—Rudolf Weil (died November 7, 1914) is commemorated by H. DRESSEL in a biographical notice in *Z. Num.* XXXII, 1915, pp. 168–170, immediately following two obituaries written by WEIL himself on Antonino Salinas (died March 12, 1914) and Barclay Vincent Head (died June 12, 1914).

## EGYPT

**THE ITALIAN EXPEDITION OF 1909–1914.**—During the years 1909–1914 the Italian expedition to Egypt carried on excavations in the cemetery at Assiut where it had worked in previous years, explored two cemeteries and the fort at Ghebelain, south of Thebes, and began the exploration of the cemetery at Assuan. At Ghebelain the fort is in the main Ptolemaic, although part of it goes back to the twenty-second dynasty. The temple of Hathor was found to be very ancient, going back to the beginnings of Egyptian history. Many inscriptions from the third dynasty to Roman times were unearthed. The cemetery containing tombs from prehistoric times to the sixth dynasty was partly excavated. Many tombs were intact. The cemetery of the eleventh to the seventeenth dynasty yielded many fine vases. Other tombs dating from the first to the tenth dynasty were also opened. At Assiut antiquities of various periods came to light, but most of them from the sixth to the twelfth dynasty. At Assuan the most notable discovery was the tomb of Hikab on the island of Elephantine. It was adorned with beautiful painted reliefs, has a large hall and a magnificent stairway, one hundred metres long and four wide, running from the Nile to the tomb. Many of the antiquities brought to light by the expedition have been deposited in the museum at Turin. (*Cronaca delle Belle Arti*, I, 1914, pp. 92–93.)

**GIZEH AND MEMPHIS.**—The Expedition of the University of Pennsylvania.—In the *Museum Journal* of the Museum of the University of Pennsylvania, VI, 1915, pp. 63–84, is a brief report of its Egyptian expedition. In the spring of 1915 C. S. Fisher, by a special arrangement with the authorities of the Boston Museum of Fine Arts, carried on excavations for six weeks in their concession in the pyramid field at Gizeh. Several tombs were opened. The most interesting discovery was an offering-chamber of mud brick with a ribbed vault made of bricks with interlocking joints. This is not later than the sixth dynasty. Another discovery was an offering-table having around its edges two rows of hieroglyphs in which appear the names of the kings Khufu, Khafra and Dedefra. The expedition obtained a concession at Memphis and began excavations on what is supposed to be the site of the royal palace under the New Empire. Columns covered with inscriptions, and other parts of what was evidently a large building, have so far been uncovered.

**KERMA.**—The Excavations of the Boston Expedition.—In *B. Mus. F. A.* XIII, 1915, pp. 71–83 (17 figs.), G. A. R(EISNER) reports that an examination of the bones has proved that in the burials of the Hyksos period (see *A. J. A.* XVIII, p. 387) the chiefs were Egyptians and the sacrificed slaves, Nubians. During the Middle Empire Dongola was an Egyptian province, and the three

great mounds known as Mounds III, IV, and X were found to be the grave tumuli of Egyptian governors of the Sudan. This is a type of grave hitherto unknown in Egypt. The first two mounds date from the twelfth dynasty, and the third from the thirteenth. Mound III was the tomb of the prince Hepzefa, whose great rock-cut tomb at Assiut is well known. The reason for the contracts requiring the priests to make offerings to his statue is now clear. A statue of his wife Sennuwi, and the base of a statue of himself were found in the mound. The tomb was constructed thus:—A low circle of mud brick 10 cm. high and having a diameter of 80 to 90 m. was first built. Then two parallel walls were run across the circle from east to west making a corridor two or three metres wide (Fig. 1). Cross walls ran out to the circumference.



FIGURE 1.—TOMB OF PRINCE HEPZEFA

The burial chamber lay on the south side of the corridor, roofed over with mud brick. After a feast, for which more than one thousand oxen were sacrificed, the body of the prince was buried and then between two and three hundred Nubians, men, women and children, driven into the corridor and either buried alive or strangled first and then buried. After the earth was filled in a floor of mud brick was laid over the whole mound, and a quartzite pyramidon and perhaps a chapel erected upon it. Almost immediately the place became a cemetery, the graves being sunk through the pavement. In Mound X the base of a statue of King Ra-khuw-tauwi, of the thirteenth dynasty, was found. This is the last of the great mounds, although there are fifteen or twenty others of smaller size. North of the mounds was a large cemetery in which about sixty Nubian graves were excavated. All show the same barbaric method of burial with the body placed on a bed. Most of



the objects found in the graves are of local manufacture, though a few are Egyptian, or imitations of Egyptian work. The great development of the arts in Nubia during the Middle Empire must have been due to the presence of Egyptian artisans. The pottery of Kerma is the finest ever made in Egypt. Several hundred fragments of statues carved by Egyptian sculptors of local materials were discovered; also inscriptions in Egyptian hieroglyphics; nineteen different kinds of pottery in 293 different forms; scarabs of steatite with blue or green glaze; and scaraboid, oval, and square seals, usually of ivory. A most remarkable scarab was a large blue-glazed stone set in gold, with a human head and rows of minute flies across the back. Among the objects of bronze were swords, daggers, knives, mirrors, razors in wooden cases, tweezers, awls, needles, etc. The swords differ from those in use in Egypt. Some of them were 60 cm. long, with a tortoise-shell or wooden grip and a long, flat ivory hilt. They were carried in rawhide scabbards over the shoulder. The wooden objects found include beds with ivory inlays, stools, throwing-sticks, etc. Among the inlays are seen the two-horned rhinoceros, and the ant-bear, never represented in ancient Egypt. Many stone vessels came to light, and vessels, mace-heads, tiles, etc., of faience. The decorations on the faience were line drawings, but in one case the background was filled in with black. Mica ornaments were used on the leather caps of the women. Gold was abundantly used, and heavy gold rims were put on bronze and even on pottery bowls.

**THEADELPHIA.**—*The Temple of Pnepheros.*—In *R. Arch.*, fifth series, I, 1915, pp. 181–188, the report of E. BRECCIA, director of the museum at Alexandria, on the progress of the museum in 1913, is reprinted. It is devoted chiefly to a description of the ruins at Theadelphia (Batn Herith), where a temple dedicated to Pnepheros was excavated. Pylons, courts, a large altar, and a number of frescoes were laid bare. The temple was flourishing in 137 B.C. and in 163 A.D., as inscriptions prove. Its prosperity seems to have decreased gradually until the worship of Pnepheros ceased. Some lesser antiquities were found in neighboring houses, but the harvest of papyri was disappointing. Excavations in the necropolis at Hadra produced vases of the Hadra type and some other objects. The museum has been enriched by several acquisitions, for the most part found at Alexandria.

**THEBES.**—*The Work of the Expedition of the Metropolitan Museum in 1914–1915.*—During the season of 1914–1915 the expedition of the Metropolitan Museum to Egypt did no work at the pyramid of Lisht, but carried on excavations on the site of the palace of Amenhotep III at Thebes, and cleared out and mapped several tombs near Sheikh Abd el Kurneh. In *B. Metr. Mus.* X, 1915, pp. 228–236 (6 figs.), N. DE G. DAVIES describes his work at the tombs. In the tomb of Surer (No. 48 in Gardner and Weigall's *Catalogue*), who was scribe, chamberlain and fan-bearer of Amenhotep III, many written fragments were found including a leaf of papyrus dealing with the sale of a slave girl; also a well-preserved relief of Amenhotep III enthroned; and the upper part of a statue which probably represents Thothmes IV. The tomb of Pufmre (No. 39) was nearly cleared, but new shafts and chambers were found opening out in every direction. Far below the surface two large rooms were found to be knee-deep in remains of bodies which had been torn apart. The tombs of Userhet (No. 51) and of Thothemhab (No. 45) were completely cleared and plans of them made. In the tomb of Nakht (No. 52) a fine painted

statuette of the owner (40 cm. high) was found, but this was afterwards lost in the sinking of the *Arabic* off the coast of Ireland. In addition, plans, tracings, etc., were made in whole or in part of tombs 181, 51, 93, 75, 60, 217 and 48. *Ibid.* pp. 253-256 (4 figs.) H. G. EVELYN-WHITE reports that he cleared three tombs on the hill known as El Khokheh, one dating from the Middle Kingdom, one from the time of Osorkon II, and the third, the tomb of Ta-nefer, from the eighteenth or nineteenth dynasty. At the palace of Amenhotep III work was carried on to the north of the area already excavated, and a large, rectangular building uncovered. The scheme of a bedroom, robing-room, bath and wardrobe rooms closely associated with a throne-room is typical of all the royal apartments. It is probable that this building was occupied either by Queen Tiy, or by the heir-apparent, Amenhotep IV.

**The Excavations at the Monastery of Epiphanius.**—In 1913-1914 the excavations of the Metropolitan Museum of New York at the Monastery of Epiphanius near Thebes were completed. Many objects illustrating the life of the monks were brought to light, including hundreds of letters on ostraca and papyrus. The monastery was founded at the beginning of the seventh century. (H. E. W., *B. Metr. Mus.* X, 1915, pp. 138-150; 10 figs.)

## ASIA MINOR

**RHODES.**—Explorations.—In *Boll. Arte*, VIII, 1914, pp. 219-242 (26 figs.), L. PERNIER publishes an account of recent explorations in the island of Rhodes. On the acropolis at Ialysus, a Corinthian capital, drums of columns and large pieces of stone indicate the site of a large building. Near Villanova a group of tombs containing early vases was found by a peasant. On the acropolis of Camirus a fragment of an inscription similar to *I.G.I.* I, 695, preserves part of the name *Κρητινάδας*. The words *τῶν κατὰ τὸν σεισμὸν τελευτῶντων* found on an altar refer to the earthquake of 222 B.C. The presence of many tombs was noted. At Leros or Lelos were found tombs and a small piece of the citadel wall of good Greek period. Marmuralia and Hagios Phokas formed the citadel of a Greek city. Many ancient fragments lie scattered about between them. Both have well-preserved pieces of the citadel wall. At Vasilika a piece of wall was observed and the site of a large necropolis noted. *Ibid.* IX, 1915, pp. 283-300 (11 figs.), G. G. PORRO reports that efforts were made by the Italian expedition in Rhodes to find positive evidence for the site of the ancient Camirus, but without success. Tombs were found in all directions, including fifteen chamber tombs at Kekhragi, and a dromos tomb at Kaminaki Lures. Fragments of large pithoi were found in several places, many of them decorated with meander and spiral patterns. An owl-faced statuette of terra-cotta, numerous vase fragments, and thirty-five inscriptions were also discovered.

## GREECE

**ATHENS.**—The Work of the French School in 1913-14.—During the year 1913-14 members of the French School at Athens made several tours in Epirus and Macedonia recording inscriptions and noting sites worthy of excavation. At Dium were found remains of a street, a Doric temple, an agora surrounded by colonnades, and a theatre. In Chalcidice inscriptions and unpublished

reliefs were discovered. At Delphi M. Courby carried on excavations inside the temple with a view to determining the interior arrangement. He has also attempted a restoration of the east front. M. Blum has proved among other things the correctness of Bourguet's suggestion that on a terrace of the same level as that of the tripod of Plataea there was a colonnade erected by Attalus. Another building of the same date was situated on the road running along the south terrace. Its purpose has not been determined. A study was also made of a building of fourth century date at the west of the temple, and of the heroon of Pylaea dating from the first or second century A.D. At Delos work was carried on especially near the Cynthian hill. A plan of Delos on the scale of 1/1000 has been begun. Besides the work at Thasos already reported the site of Philippi was examined. Traces of the theatre, which was larger than the one at Athens, were found; also numerous small, rock-cut sanctuaries which yielded many reliefs and inscriptions; and a large building which may have been a temple. Less important were an altar dedicated to Isis, a long and interesting Christian inscription, a broken statue of an emperor in armor, terracotta figurines, etc. C. Avezou has written an elaborate work on the gymnastic establishments at Delos. The students at the School in Rome have been interested chiefly in mediaeval subjects; Jean Martin, who was making a special study of the earliest remains in Sicily, was killed in battle. (E. PORTIER, *C. R. Acad. Insc.* 1915, pp. 53-72.)

**ATSIPADA.**—Children's Graves.—In 'Αρχ. 'Εφ. 1915, pp. 48-50 (3 figs.), E. N. PETROULAKIS describes a children's cemetery he discovered near Atsipada (Crete), in which the children are buried in vases belonging to the period of transition between the Mycenaean and the Geometric periods. In each large vase was also a smaller one.

**AXOS.**—Recent Discoveries.—In 'Αρχ. 'Εφ. 1915, pp. 43-48 (5 figs.), E. N. PETROULAKIS publishes a late Roman votive relief representing Demeter, and a large number of terra-cotta figurines, found at Axos (Crete), and evidently coming from a sanctuary of Demeter which awaits excavation.

**PHAESTUS.**—Two Tholos Tombs.—In *Ausonia*, VIII, 1913 (published 1915), Scavi, cols. 13-32 (26 figs.), R. PARIBENI reports upon the excavation of two tholos tombs southwest of the modern village of Siva, near Phaestus. They are not quite circular, but have an approximate diameter of 5.70 m. and 4.58 m. respectively. Their walls, built of stones of moderate size, are preserved in places to a height of one meter. Between the two tombs was an intrusive burial, and another near the entrance to the southern tomb. Both of the tholos tombs were plundered in antiquity; but in the southern of the two fifty-three objects of various kinds were found, and fifteen more in the northern. They consist of vessels and other antiquities of stone and of terra-cotta, bronze dagger blades, seals, the head and chest of a small figure of ivory of rude workmanship, etc. The intrusive burials yielded about a dozen other small objects. The tombs appear to date from the period of Early Minoan III. The bodies in them were not burned.

**RETHYMNA.**—Miscellaneous Antiquities.—In 'Αρχ. 'Εφ. 1915, pp. 51 f. (4 figs.), E. N. PETROULAKIS publishes antiquities in the museum of Rethymna (Crete): three small aediculae, each with two niches for painted tablets; a late grave stone; a piece of lead water pipe with the inscription  $\Sigma\omega\lambda\ \eta\gamma\epsilon\varsigma$

*Δφθρῶνος*; a Latin elegiac epitaph in memory of a certain Civranus, perhaps the governor of Rethymna who died in 1616 A.D.

**TYLISSUS.**—*The Excavations.*—In *Ausonia*, VIII, 1913 (published 1915), pp. 76-89 (pl.; 16 figs.), J. HAZZIDAKIS gives a general account of the excavations at Tylissus, eight miles west of Cnossus. Three large houses have been uncovered (Fig. 2). The largest has twenty-two rooms; the second, which



FIGURE 2.—TYLISSUS; PLAN OF THE EXCAVATIONS

lies immediately west of it, has twenty rooms; and the third, a short distance to the northeast, seventeen. In the first house the rooms are paved with slabs of irregular shape except in places where the natural rock was leveled off to take the place of pavement. There are corridors as in other Minoan buildings, also square pillars which once supported the second story, and numerous large *pithoi* standing in the storerooms (Fig. 3). This house has four stairways three of which led up to the second story, while the third led down to a small

room or shrine. Beneath the large court are remains of earlier walls. In the house to the northeast the walls are standing in places to a height of 2 m. The north wall consists of large blocks very carefully laid in regular courses. One of the stairways in this house has all of its eight steps in place, another has ten steps, and a third eleven steps of one flight and five of another. This house was destroyed by fire after it had been pillaged. The most interesting object of bronze found in the excavations was the statuette of a man shading his eyes with his right hand. There were also found four caldrons of bronze, the largest having a diameter of 1.4 m., and a bronze "talent" weighing 26.905 kg. Among the *pithoi*, which were numerous, was one with a bull's head upon it. Many vases were found, including some good examples of the "Palace" style. Among the votive objects were "horns of consecration," a primitive

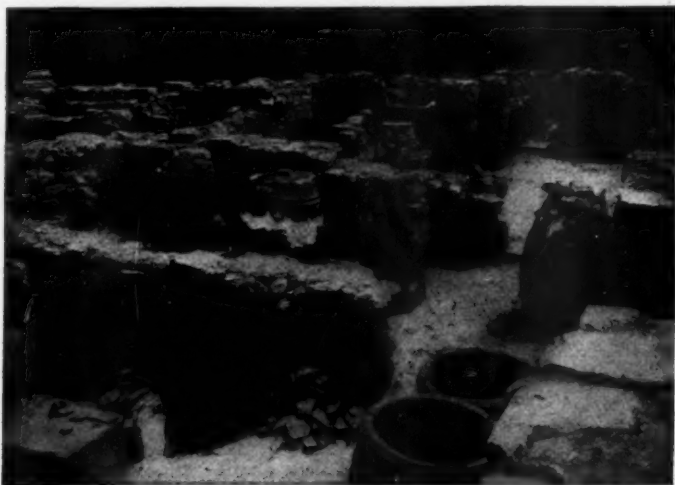


FIGURE 3.—TYLISSUS; HOUSE WALLS AND PITHOI

bull's head, a small male figure with Minoan letters incised upon it, a primitive female head, a late Minoan figure, and what appears to be a woman's dress of terra-cotta. The fifth century inscription written in Argive characters (see *A.J.A.* XIX, p. 349) was found 45 cm. above the débris which marks the end of the Late Minoan period. The level of Late Minoan I and Middle Minoan III is 2 m. below this. In a few places below this level were found vases of Middle Minoan I, and of earlier date. Except for a few tiny fragments vases of the Kamares style have not yet been found at Tyliassus.

### ITALY

**BEVAGNA.**—A Roman Mosaic.—The large Roman mosaic found at Bevagna has been carefully excavated and cared for and will be preserved in

*situ*. It represents a life-size Neptune surrounded by dolphins, sea-horses, fish and other marine animals. (*Cronaca delle Belle Arti*, I, 1914, p. 94.)

**CAGLIERI.**—The Gouin Collection of Sardinian Antiquities.—In *Boll. Arte*, VIII, 1914, pp. 251-272 (32 figs.), A. TARAMELLI describes an important collection of Sardinian antiquities recently acquired by the museum at Cagliari. It was made during a period of thirty years by Leone Gouin who died in 1888. The civilization of the period of the nuraghi is abundantly represented by pickaxes, axes, lances, knives and a saw, all of bronze; by bronze figurines, among which is a warrior with four eyes and four hands holding two swords and two shields; and by figurines of terra-cotta. There are several pieces of Carthaginian sculpture, probably from Tharros. The collection also includes necklaces, scarabs and seals; toilet articles in ivory, bone, silver and bronze;



FIGURE 4.—RELIEF FROM LECCE

some Southern Italian and Roman vases; Roman bronzes; and many hundreds of vases, especially those dating from prehistoric times from the grottoes of S. Lucia and S. Orreri. Among the terra-cottas is a large bust of Astarte with elaborate head-dress.

**CASTEL PORZIANO.**—A Large Mosaic.—In 1910 a large villa of the time of Severus was discovered near Castel Porziano and partly excavated. Many rooms were decorated with mosaics. A well-preserved quadriporticus with a fish pond in the middle had a mosaic floor with representations of hunting scenes, Nereids and Tritons receiving the armor of Achilles, sea monsters and wild animals. This mosaic, which covers about 350 square metres, has been removed to the National Museum at Rome. (*Cronaca delle Belle Arti*, II, 1915, p. 41.)

**LECCE.**—A Tomb with Sculptured Reliefs.—In 1912 there was discovered in the garden of the Palazzo Palmieri at Lecce (the ancient Rudiae) a large



tomb cut in the native rock. A stairway of sixteen steps leads down to a rectangular space on three sides of which chambers open. On both sides of the doorways are half-columns hewn in the rock, the capitals adorned with Ionic volutes and foliage. Over one of the doors is the Messapian word AAZENACFOP scratched more or less carefully four times. On each side of the stairway, on a level with the third stair from the top, and equal in height to two stairs, is a frieze. On one side this frieze is 0.30 m. high and 3.17 m. long and represents a combat between horsemen and warriors on foot (Fig. 4). The figures are in high relief and are carved with much spirit. The other frieze is 0.30 m. high and 3.26 m. long and consists of floral decorations. The tomb dates from the end of the fourth or beginning of the third century B.C. Graffiti on the walls show that the tomb was probably used as a cellar in the seventeenth century. (G. BENDINELLI, *Ausonia*, VIII, 1913, pp. 7-26; pl.; 8 figs.)

**OSIMO.**—Gallic Tombs.—Several Gallic tombs, some with rich furnishings, have recently been found at Osimo. In one was a diadem consisting of a gold band with discs and acorns of terra-cotta covered with gold foil attached. All the objects have been placed in the museum at Ancona. (*Cronaca delle Belle Arti*, I, 1914, pp. 87-88.)

**PIEDMONT.**—Excavations 1909-1914.—In *Cronaca delle Belle Arti*, I, 1914, p. 92, a brief account is given of the excavations in Piedmont during the five years ending in 1914. Work was carried on at Industria, Libarna, Piccolo San Bernardo, Ventimiglia and Aosta.

**ROME.**—Discoveries in 1914.—In *B. Com. Rom.* XLII, 1914, pp. 196-214, L. CANTARELLI notes that the most important discoveries made in Rome in 1914 were two female statues found near the Via Venti Settembre, and a number of inscriptions, including one in verse. *Ibid.* pp. 215-217 he calls attention to an inscription of a certain Bassus, *procurator* under Hadrian, found at Ventimiglia; and, *ibid.* pp. 221-222, to another found at Palestrina reading,

C. SAVFEIO · C · F ·  
SABINI  
C. ORCEVIO · M · F  
////////// I  
CENSORES  
HASCEARAS  
P'ROBAVERONT  
IVNO · P'ALOSTCA  
RIA

It dates from about 100 B.C.

**Excavations in the Forum and on the Palatine.**—A brief report of the excavations carried on in the Forum and on the Palatine during the five years ending with 1914 is published in *Cronaca delle Belle Arti*, I, 1914, pp. 73-74. These include the house of the republican period in the Summa Sacra Via; the *horrea* of imperial times near the Sacra Via; the Basilica Aemilia; the systematic exploration of the house of Livia; and the house of the Flavii. Many fragments of sculpture and vases, and terra-cotta figurines were found on the different sites.

**Recent Discoveries in the Mithraeum beneath Saint Clement's Church.**—In *C.R. Acad. Insc.* 1915, pp. 203-211 (3 figs.), F. CUMONT reports upon re-

cent archaeological work in the cellar of the church of Saint Clement at Rome. This church rests upon the foundations of a temple of Mithra built at some unknown date in a large house of the time of Augustus. After much trouble water was diverted from the site which is now dry and open to inspection. Part of a heavy wall belonging to the republican period can now be seen. Recent discoveries include a fountain which stood before the temple; numerous remains of animals, especially of wild boars; and part of the altar discovered in 1859. It is inscribed CN. ARRIVS. CLAVDIANVS | PATER POSUIT. and dates from the end of the second century A.D. The head of a solar deity found in 1869 is of the same date.

**Remains of a Marble Building in the Viale del Re.**—On the right of the Viale del Re shortly before it reaches the old station of Trastevere various architectural fragments were found 6 m. below the modern level. They belonged to a small marble building with columns and entablature. Enough remains to permit a restoration in the National Museum to which the fragments have been removed. (*Cronaca delle Belle Arti*, II, 1915, p. 39.)

**A Small Building in the Viale del Re.**—In September, 1914, a small building was found in the Viale del Re. It consisted of a room 2.25 m. long and 2.38 m. wide, and at one end a semicircular niche decorated with shells in stucco and surmounted by a pediment of brick. Below the level of the niche, built into a wall, was an inscription mentioning a fountain and the name of Vespasian. (*Cronaca delle Belle Arti*, II, 1915, p. 39.)

**The Horrea Seiana.**—Excavations near the Monte Testaccio have uncovered parts of the ancient Horrea Seiana. A hoard of 885 coins dating from Antoninus Pius to Gallienus and Salonina was found. (*Cronaca delle Belle Arti*, II, 1915, p. 39.)

**Remains of Five Aqueducts.**—In the autumn of 1912, in opening a new street between the square of the Porta Maggiore and the new railway station, remains of five aqueducts were found, two with subterranean *specus*. One is the Anio Vetus, another the Aqua Appia-Augusta, another probably the Aqua Claudia, another the combined Julia, Tepula and Marcia, and the fifth the Anio Novus. (*Cronaca delle Belle Arti*, II, 1915, p. 38.)

**A New Fragment of the Arval Inscription.**—In *B. Com. Rom.* XLII, 1914, pp. 34–40, O. MARUCCI makes a preliminary announcement of the discovery of an important fragment of the Arval inscription. It was found in the autumn of 1914 in the course of systematic excavations in the lower basilica of S. Crisogono in Trastevere. The marble is 0.60 m. broad, 0.50 m. high, and 0.06 m. thick. The writing is bad and contains many abbreviations, ligatures, and oddly shaped letters. Its date is 240 A.D. (Gordian III). Two columns of text, each of forty lines, and a portion of a third, are extant. They contain part of the ceremony of the announcement of the festival of Dea Dia, a description of the *sacrificium piacular* on the 31st of March in the grove of Dea Dia on the Via Campana, the ceremony performed at the cooptation of new members, the ritual for the festival of Dea Dia, etc.—a fuller account is soon to appear in *Not. Scav. Ibid.* pp. 317–321, FRANCESCO FORNARI discusses the rite of the *cena* given to the Mater Larum which is mentioned in this inscription. He thinks that it was apotropaic and that the Mater Larum was a goddess concerned with the dead.

**Statues of Hygieia and Asclepius.**—In *B. Com. Rom.* XLII, 1914, pp. 3–12

(2 pls.), LUCIO MARIANI describes the torsos of two life-size statues of Parian marble found in 1914, in the course of building operations in the area of the former Piombino palace on the piazza Colonna. The first, a Hygieia, without head and hands, but showing traces of the serpent on the right arm, is a Roman copy of an original of the third or fourth century B.C., perhaps one of the Pergamene group of Asclepius and Hygieia by Phyromachus. Its companion piece, an Asclepius, is without the head and right arm. The left hand rests on the hip; there are traces of the staff under the left arm-pit, also some traces of the serpent are still to be seen. It is a Roman copy of a well-known type of the fifth century usually attributed to Alcámenes. No Pergamene influence is traceable. The execution seems to indicate a bronze original. *Ibid.* pp. 12-24, RODOLFO LANCIANI shows that these statues were found buried five metres above the ancient surface. They were, therefore, buried in modern times. They probably belonged to the collection of Cosimo Giustini, ca. 1600.

**Female Statues.**—In 1905 a headless female statue of life size was found between the Via Servio Tullio and the Via di Porta Salaria. Recently a similar statue has been unearthed in the same place. The *Senaculum Mulierum* of the time of Aurelian was in that vicinity, and the statues may have had something to do with it. The neighborhood will be further explored. (*Cronaca delle Belle Arti*, II, 1915, p. 38.)

**A Reference to the Auguria Maxima and Minima.**—Excavations in the Via Marforio to give more space about the monument of Victor Emanuel II brought to light an inscription mentioning the *auguria maxima* and *minima*. (*Cronaca delle Belle Arti*, II, 1915, p. 39.)

**A Stamp.**—In the wall bounding the Horrea Agrippiana from the side of the Atrium Caii was found twice the stamp, *M(arci) Publici Sed(ati) Teg(ula) Ton(neiana)* (cf. *C.I.L.* XVI, No. 637). It is to be dated ca. 100 A.D. (*B. Com. Rom.* XLII, 1914, p. 33.)

**Acquisitions of the National Museum in 1913.**—In *Boll. Arte*, VIII, 1914, pp. 278-287 (6 figs.), R. PARIBENT reports that during the year 1913 there were added to the collections in the Museo Nazionale Romano 1,092 objects. The more important are (1) a life-size nude Apollo, with the left arm broken off at the elbow; (2) an archaistic, headless draped female figure of life size; (3) the Ephebus of Sutri (*Not. Scav.* 1912, p. 273); (4) a relief in black marble (1.04 m. long and 0.56 m. high) with a centaur and a Heracles in panels and an ornamental border of foliage and tiny cupids above; (5) portrait head of Trajan of basalt; (6) part of a relief representing a male head crowned with the sun's rays, and in the background a smaller head and stars, probably to be referred to an oriental cult of the Sun. Many coins were also acquired. In *Cronaca delle Belle Arti*, I, 1914, pp. 75-78 there is an account of the changes in recent years in the Museo Nazionale Romano and the various acquisitions. These include thirty-five pieces of sculpture. The price paid for each is noted.

**Acquisitions of the Prehistoric and Ethnographic Museum.**—In *Cronaca delle Belle Arti*, I, 1914, pp. 78-79, is given a brief account of the acquisitions of the Museo Preistorico-Etnografico for the years 1909-1912.

**SARDINIA.**—Excavations in Recent Years.—In *Cronaca delle Belle Arti*, I, 1914, pp. 81-84, A. TARAMELLI publishes a brief account of the excavations carried on in Sardinia in recent years, ending with the year 1914.

**SYRACUSE.—Acquisition of Coins.**—During the year 1913-1914 the museum at Syracuse acquired 65 Sicilian Greek coins, 2 Carthaginian, 155 Roman and 13 from Magna Graecia, besides Byzantine and mediaeval coins. Among the more important pieces are a fine Syracusan medallion of Euaenetus, some tetradrachms of the period of transition, probably to be referred to Eumenes, and a rare Catanian tetradrachm of Euaenetus. A hoard of 151 consular denarii was also acquired, as were 60 gold soldi of Marcian, Anastasius, Justin I, Leo II, Zeno, and Basil. Among the mediaeval coins was a very rare Messenian gold ducat of Peter of Aragon and Costanza, and another of Ferdinand the Catholic. (*Cronaca delle Belle Arti*, I, 1914, pp. 62-63.)

**TARANTO.—Recent Acquisitions of the Museum.**—The museum at Taranto has acquired the fine Hellenistic herm of a bearded Dionysus recently excavated in that city, as well as five large pieces of Roman mosaic. (*Cronaca delle Belle Arti*, II, 1915, p. 52.)

## SPAIN

**BALEARIC ISLES.—Pre-Roman Remains.**—In the spring of 1911 A. MAYR made an archaeological tour of the islands of Mallorca and Menorca examining all the prehistoric remains. He has now published his results describing the monuments at the following sites in Mallorca: Son Noguera, Pedregar, Cape Corp Vell, Son Homs, Predio Son Joy, Sa Blanquera, Son Amosa, Predio Son Suredda Ric, Predio Bellver Ric, de Bandris, Predio Son Suredda Povre, es Rafel, Son Gruta, Porto Cristo, Cala Morlanda, El Rafalet, Lluccamar, Hospitalet, and Can Daniel. In Menorca remains at the following places are described: Trepucó, Curnia and Turo, Talati de Dalt, Binicalaf Vey, Torre d'en Gaumés, Torre Nova d'en Lozano, and Torre Llafuda. He also describes antiquities in stone and bronze, as well as pottery in the collections of Don Juan Amer in Manacor, and Don Jaime Planes in Palma. The purpose of the talayot is also briefly discussed. [*Über die vorrömischen Denkmäler der Balearen*. Von ALBERT MAYR. Munich, 1914, König. Bayerisch. Akad. 68 pp.; 13 pls.; 14 figs.]

**MÉRIDA.—The Roman Theatre.**—In *C. R. Acad. Insc.* 1915, pp. 164-174 (4 figs.), R. LANTIER gives an account of the Roman theatre at Mérida, describing in some detail the excavations carried on from 1910 to 1914. The structure extends 86 m. from east to west. Granite, concrete, brick and marble were all used in its construction. There were three tiers of seats, the first having twenty-four rows, the second five, and the third four rows. At each side of the orchestra was a large vaulted entrance above which were *tribunalia* or boxes. The excavations brought to light among other things part of the apparatus by which the curtain was raised and lowered. This consisted of small square conduits, varying from 30 cm. to 50 cm. square, driven 3 m. into the soil at intervals of about 3 m. along the whole length of the *pulpitum*. In them were probably set double tubes as at Timgad. Nothing remains of the stage. Behind it were rooms opening on the portico at the rear of the stage buildings. An inscription of Agrippa proves that the theatre dates from 16 A.D., but the stage buildings were rebuilt after a fire in 135 A.D., and again in the fifth century. The theatre was abandoned in the sixth century.

## FRANCE

**BOURGES.**—A Gallo-Roman Grave Stele.—In *R. Ét. Anc.* XVII, 1915, pp. 275-276 (pl.), É. ESPÉRANDIEU publishes a Gallo-Roman grave stele recently found with others at Bourges. It is of a soft stone 0.47 m. high and has carved upon it the rude figure of a standing nude woman. It bears an inscription which the writer interprets as *N(umini) et Gl(oriae) Caesari(s); [C(aius)] Rufinius Adnam(etus), Africani f(ilius), d(onum), d(edit)*. The figure represents some local goddess. The stele may date from the end of the third century A.D.

**GIRONDE.**—Archaeological Discoveries.—In *R. Arch.*, fifth series, II, 1915, pp. 80-83, Dr. PEYNEAU describes various discoveries in the Gironde. At Mios, in a necropolis crossed by an ancient road, eight tumuli were opened. The calcined bones of the dead were contained in large urns. Arms and various objects for personal use and adornment were found. A fine axe of jadite was found about 200 m. from this necropolis. In an isolated tumulus was an urn containing calcined bones. A second necropolis, at Truc de Bourdiou, near Mios, consists of flat graves, not tumuli. The incineration is here less complete. The objects found are in part later than those found in the tumuli. The inhabitants of the place seem to have been largely potters and iron-workers. At Biganos about thirty tumuli were explored. Like those of Mios, they date from the first Iron Age. The urns were similar to those of Mios, but the general effect was poorer, and objects of iron were almost entirely wanting.

**LAGARDY.**—A Neolithic Settlement.—In *L'Homme préhistorique*, II, 1914, pp. 233-246 (2 figs.), M. SAGE describes a recently discovered neolithic settlement at Lagardy, Commune of Malemort, Vaucluse.

**NÉRIS.**—A Statuette of the God with a Wheel.—In *B. Soc. Ant. Fr.* 1915, pp. 100-104 (2 pls.), M. PROU publishes a terra-cotta statuette of the "god with the wheel" (Taranis?) found at Nérès (Allier). The head and lower parts of the legs are gone. In its right hand, which rests by its side, the figure holds a wheel. The type is a new one.

**PARIS.**—The Arena of Lutetia.—In *C. R. Acad. Insc.* 1915, pp. 195-203 (plan), Dr. CAPITAN points out that in 1914 the municipality of Paris acquired the site of the ancient arena of Lutetia. Excavations were carried on here in 1870 and 1871, and again in 1883, but the remains brought to light were afterwards covered up. They have now been uncovered again, and the excavations extended. The site will be kept open and be made into a public square. The amphitheatre of Lutetia probably dates from the time of Hadrian.

**Acquisitions of the Louvre in 1914.**—In *B. Soc. Ant. Fr.* 1914, pp. 302-305, A. HÉRON DE VILLEFOSSE and E. MICHON report the following acquisitions of the Louvre in 1914. 1. A portrait head of a Roman lady. 2. A draped female bust found at the Piraeus in 1854 and dated by an inscription in the archonship of Philistides. 3. A colossal bearded head from Macedonia, dating from the time of the Antonines. 4. A large grave stele bearing a *loutrophoros* and inscribed *Φαλακρος Αιολος Κεφάλαιος*. 5 and 6. Byzantine reliefs. 7. A large bronze group of Eros and Psyche, from Rhodes. 8 and 9. Two armlets from Tiryns, one decorated with six griffins with helmeted human heads, the other with three zones of animals. 10. A girdle ornamented with three rows of

buttons in repoussé. 11. A large glass cup ornamented with leaves in relief. 12. A vase of white glass.

**SAINT GERMAIN-EN-LAYE.—Roman Tombs.**—In *R. Arch.*, fifth series, I, 1915, pp. 197-202 (10 figs.), B. CHAMPION reports the discovery of seven Gallo-Roman tombs near Saint Germain-en-laye. They were found in March, 1914, in the course of work carried on for other purposes in the property of Mr. MacAvoy. In the tombs were skeletons and objects of iron, clay, and glass, besides a few coins (one of Constantius Chlorus and one of Maximian). Further and more systematic excavations may take place at some later time.

## GERMANY

**BERLIN.—Meetings of the Archaeological Society.**—The meetings of the Berlin Archaeological Society in January, February and March, 1915, are reported in *Arch. Anz.* 1915, cols. 50-57. The January meeting was devoted to a discussion of the architectural history of the ancient theatre, by E. Fiechter of Stuttgart, with reference to his recent book on the subject, and to replies from Dr. W. Doerpfeld and E. Bethe of Leipzig. At the February meeting M. Mayer of Leipzig, also referring to his book, *Apulien vor und während der Hellenisierung*, spoke on the pre-classic period of Apulian civilization, in which influences came, through sea-borne trade and later through colonization, both from the Adriatic coast of the Balkan peninsula and from the Aegean, suppressing or overlaying the native Siculan and Italic elements. The relation of Messapians and Iapygians, the peculiar costume of the region, and the abundant native pottery, of geometric style, were discussed, as well as the influence on pottery and other arts of the small, politically unimportant Greek immigration from Crete, Rhodes, Miletus, etc. G. Loeschke called attention to the similarity of early Apulian ceramic art to that of Cyprus in the Graeco-Phoenician period; and H. Schuchhardt to an apparent connection between the early Spanish, the Second Trojan, and the First Siculan periods. At the March meeting, P. Schubring, who is soon to bring out a book on the subject, discussed the use of classical myths on the Italian painted marriage chest of the Quattrocento. These chests, chiefly from Tuscany and other parts of northern Italy and often painted by famous masters, are mostly in private possession in England, France, America and Austria, as well as in Italy; but they show much more clearly than the madonnas and saints by which that century is chiefly represented in museums and galleries, the very intimate relation with the antique which the Italians felt and which constituted the real Renaissance in their country. Of 892 numbers in the catalogue of these pictures, 375 are from ancient legends, both Greek and Roman. They recall the stories of the *Iliad* and *Odyssey*, the Greek gods, the metamorphoses, the *Aeneid*, as well as the heroes and heroines of early Roman legend and even historical characters, Scipio, Caesar, Vespasian and others, down to the story of Antiochus I and Stratonice. The artists introduced these divine and human beings into surroundings of their own time and place, not from naïveté, but from a real conviction of their own historical descent as a people from the races and lands to which the tales belonged.

**HESSEN.—Recent Excavations.**—In *Berl. Phil. W.* October 2, 1915, cols. 1257-1264, G. WOLFF describes the excavations carried on during the last two



years at a station of the Roman *limes* on the Salisberg. He also records the discovery of pre-Roman roads in Kurhessen.

### AUSTRIA-HUNGARY

**BUDAPEST.**—Acquisitions of the National Hungarian Museum in 1913.—A report of the addition made in 1913 to the archaeological section of the National Hungarian Museum is published by G. SUPKA in *Arch. Anz.* 1915, cols. 17-50 (22 figs.). The objects range from the palaeolithic stone implements of a race of men who lived about the site of Miskolcz, among cave-lions, wolves and hyenas, with horses and cattle, in a remote geological period reckoned as some 50,000 years ago, to an embossed silver bowl of Mohammedan art, with ostriches and the Moorish broken arch. Prehistoric are: weapons and ornaments of the earlier and later Bronze Age of Hungary, from Futtak and Matészalka, which show East-Asian influence; gold armlets and earrings from Transylvania, with suggestions of Mycenaean motives; and a fragmentary bronze chain of intricate design, with a tiny human figure as amulet, of the La Tène period. A lead tablet with religious symbols in relief—Magna Mater, Horseman, etc.—and two silver brooches of the La Tène period, about 150 B.C., are Dacian. To the first and second centuries A.D. belong the following small bronzes: a large lamp from Mór, having on the crescent-shaped handle a finely executed bust of Zeus, of the Otricoli type, and a bust of Helios to which a Selene was once pendent; a small bronze statuette of Athena with Corinthian helmet, adapted from a fifth century type of Core and Demeter, found in Carinthia; a rather roughly executed nude Aphrodite, from a good original from Wesprim; a dancing girl with fluttering robe and scarf, from Dunapentele; and a dancing Lar Augustus, with laurel chaplet, wide spreading skirts, and hands outstretched to hold rhyton and patera. A bronze lamp of the same period and two bronze oil flasks of about 200 A.D. have the Alexandrine motive of the negro or negroid head; and a rude urn of clay, of about the time of Constantine, has a barbaric human face moulded on one side. Some small bronze objects from the period of the migrations, found in the district of Tolna on the Danube, introduce an element of horse-shoe architecture which is Buddhist-Indian and Central-Asian, and are probably relics of the Huns; while a pair of gold earrings with filigree work, from Kőtelek, represent the art of the Greek colonies on the Black Sea. Five small silver objects from the district of Zemplén are of the ninth-tenth centuries A.D. Two Byzantine silver reliefs of St. George and the Dragon illustrate a late development of the cavalier god or hero, in a series originating in the south-east corner of the Mediterranean, and including Bellerophon-Perseus and the Thracian Horseman, as well as an Iranian mounted divinity.

### RUSSIA

**VORONÉJE.**—A Silver Vase with Reliefs.—In *R. Arch.*, fifth series, I, pp. 335 f. (2 figs.), S. REINACH publishes, from a publication of Mr. Rostovzev, three photographs of a silver vase found in 1910-1911 in a kourgan near Voronéje and now in Petrograd. On each side are two bearded Scythians in earnest conversation. This vase is a worthy pendant to the famous vase from Kul Oba (Reinach, *Repertoire des reliefs*, III, p. 498.).

## GREAT BRITAIN

**LONDON.**—*Precautions at the British Museum.*—The Trustees of the British Museum have taken special steps to safeguard its treasures. The Elgin Room has been closed to the public; the pediment sculptures of the Parthenon, the Portland Vase, the Rosetta Stone, and other more precious objects have been removed to the basement. The Parthenon frieze, which is fixed to the walls with great security, has been protected by sandbags and anti-combustion material. (*J. B. Archit.* XXII, October 16, 1915, pp. 529–530.)

## NORTHERN AFRICA

**CYRENE.**—*A Statue of Alexander.*—In *R. Arch.*, fifth series, I, 1915, p. 181 (fig.), S. R. gives a cut (from *Il Marzocco*, March 7, 1915) of a statue found by the Italians at Cyrene, in the *thermae* restored in the time of Hadrian. The figure is Polyclitan in proportions and attitude. The head resembles that of Alexander, but the whole is rather an ideal work than a portrait, perhaps originally one of the Dioscuri, with the *protome* of a horse beside him.

**MARSA MATRUH.**—*Semitic Remains.*—In *S. Bibl. Arch.* XXXVII, 1915, pp. 201–207 (5 pls.), O. BATES reports an archaeological survey of the district around Mafsa Matrûh. This place, which lies about one hundred and fifty miles west of Alexandria, possesses a small port, and represents the ancient Praetorium, a foundation of Alexander the Great. In the Eastern lagoon is a small island, known among the Arabs of the vicinity as the Gezrah-t el-Yahûdy. On the north end of the island was discovered the ground plan of a simple structure built of rough stones dry laid, and forming two rooms placed on a north and south axis. In the upper part of the filling of the chamber a number of sherds belonging to the "second Cypriote period" (1500–1200 B.C.) were discovered. These constitute the earliest Semitic remains yet found in North Africa, west of Egypt.

## UNITED STATES

**NEW YORK.**—*Recent Acquisitions of Classical Antiquities.*—In *B. Metr. Mus.* X, 1915, pp. 122–124 (4 figs.), Miss G. M. A. R. (ICHTER) notes the acquisition of five Greek vases by the Metropolitan Museum in 1914. 1. A black-figured hydria in the style of Execias is decorated with a scene of combat on the shoulder, and a marriage procession on the body of the vase. The letters H and HE suggest that the bridal pair are Hebe and Heracles. 2. A fragmentary cylix, inscribed *Πατήριος καλός*, has on its interior the figure of an athlete and on the exterior a combat. 3. A red-figured crater dating from the first part of the fifth century has a representation of Heracles slaying Busiris. 4. The fourth vase is a small marriage vase (height 12.7 cm.) with scenes of the Epaulia. 5. The fifth is a bowl with a banquet scene, of fifth century date. *Ibid.* pp. 208–212 (7 figs.) the same writer records the acquisition of a large terra-cotta plaque decorated with a funeral scene in relief (Fig. 5). The body of a woman is laid upon a bier and mourners stand around it. Traces of color are still numerous. The relief dates from the first part of the sixth century. Other acquisitions were: a brilliantly colored Etruscan frieze of terra-cotta

of third century date, representing a marine scene; a figurine from Tarentum representing a girl holding a bird; and a boy seated on a rock. The colors on the boy are well preserved. The bronzes include a Greek mirror decorated with a bearded satyr playing the double flutes while a young Scythian sits before him, in relief; a Corinthian helmet from Olympia; a bronze handle in the form of a youth; also a colander, a strigil and a pair of cymbals; four gems of Mycenaean date; and a Roman glass mosaic representing flowers and leaves. *Ibid.* pp. 236-237 (3 figs.) the same writer publishes a bronze statuette (15.6 cm. high) of a drunken Heracles recently acquired by the Museum. It is said to have come from Smyrna. It was cast hollow and filled with lead. It follows the usual type of Heracles of the third century B.C.

**Gold Pendants.**—In *B. Metr. Mus.* X, 1915, pp. 117-120 (4 figs.), Miss C. L. R(ANSOM) reports that in 1914 the Metropolitan Museum acquired three sets of gold pendants from Egypt. One set of seventeen pieces represents rams' heads; the second, of fifteen pieces, flies; the third, of six pieces, heads of the goddess Sekmet. The third necklace is later than the other two, but all probably date between the twentieth and twenty-fifth dynasties.

**The Heart Scarab of Queen Amenardis.**—In *B. Metr. Mus.* X, 1915, pp. 116-117 (2 figs.), Miss C. L. R(ANSOM) reports that the Metropolitan Museum has recently received a number of scarabs, the most important of which is of green porphyry, 8 cm. long, 5.7 cm. wide, and 1.6 cm. thick. It has been broken into three pieces. The inscription and cartouche prove it to be the heart scarab of Queen Amenardis of the twenty-fifth dynasty. It probably dates from about 660 B.C.

**A Head from Angkor Wat.**—In *B. Metr. Mus.* X, 1915, pp. 219-220 (fig.), D. F(RIEDLY) publishes the head of an image of worship from the temple of Angkor Wat in Cambodia, recently acquired by the Metropolitan Museum of New York. The face shows that the Khmeres, the authors of this sculpture, were a race midway between Hindus and Chinese. The hair shows traces of lacquer. The head probably dates from before the tenth century A.D.



FIGURE 5.—TERRA-COTTA RELIEF IN NEW YORK

## EARLY CHRISTIAN, BYZANTINE, MEDIAEVAL, AND RENAISSANCE ART

### EGYPT

**A NEW TYPE OF COPTIC CROSS.**—In *Or. Christ.* IV, 1914-15, pp. 306-311 (4 figs.), C. M. KAUFMANN publishes examples of a peculiar kind of Coptic cross, the "tube-cross" of metal.

### GREECE

**THE PAINTER EMMANUEL.**—In *Or. Christ.* IV, 1914-15, pp. 76-84, N. A. BEES throws new light on Emmanuel the painter of *Cod. Barb. Gr.* 527, showing that he lived about 1600 instead of at the time of the fall of Constantinople as supposed by Lambros.

**ECCLESIASTICAL GEOGRAPHY.**—In *Or. Christ.* IV, 1914-15, pp. 238-278, N. A. BEES publishes material for the mediaeval and modern ecclesiastical geography of Greece.

**A GREEK HOSTIA STAMP.**—In *Or. Christ.* IV, 1914-15, pp. 85-87 (fig.), C. M. KAUFMANN publishes a Greek Hostia stamp of the beginning of the last century representing Constantine, Helena, and another imperial pair; the interest of the piece lies in the fact that these stamps regularly have only symbolic decoration and this figured one may reflect an ancient form.

### ITALY

**ACQUISITIONS BY THE MINISTRY OF PUBLIC INSTRUCTION.**—The Italian Ministry of Public Instruction has recently purchased two examples of Cagnacci, a Fish-monger for the R. Galleria d'Arte Antica, Rome, and a Cleopatra for the Bologna Pinacoteca. (C. RICCI, *Boll. Arte*, IX, 1915, pp. 281-282; 2 pls.; fig.)

**PROPOSED EXHIBITION OF OLD ITALIAN AQUATINTS.**—Preliminary to a suggested exhibit of early Italian aquatints, C. VICENZI writes in *Rass. d'Arte*, XV, 1915, pp. 5-18 (19 figs.), a criticism of the works of the etchers, Piranesi, Marieschi, Canaletto, Bellotto, and Tiepolo.

**NEW ATTRIBUTIONS TO GIOVANNI FRANCESCO DA RIMINI.**—In *Rass. d'Arte*, XV, 1915, p. 74 (2 figs.), F. M. PERKINS adds to the list of the works of Giovanni Francesco da Rimini a tondo of God the Father attended by Angels belonging to L. Rosenberg of Paris, a small St. Anthony of Padua in the collection of Carl Loeser at Florence, a Madonna in the Walters Collection, a Saint in the Palazzo Ducale at Urbino (Sala II, No. 104), and an Adoration in the museum of Le Mans, France.

**THE WORKS OF GIOVANNI DI GIAMPIERO.**—In *Pagine d'Arte*, III, 1915, pp. 129-130 (2 figs.), A LUPATELLI calls attention to the works, as far as they are now known, of the Venetian sculptor Giovanni di Giampiero: the sarcophagus of B. Bartolini in the Perugia museum (1492), and the portal of S. Maria delle Lacrime, near Trevi (1511). The employment of this sculptor at Spoleto (1490-1492) is attested also by extant documents.

**ART ALONG THE AUSTRIAN FRONTIER.**—T. SILLANI, who has written a book, *Lembi di Patria*, on the subject, discusses in a number of articles (*Pagine d'Arte*, III, 1915, pp. 73-76 (5 figs.); 89-91 (2 figs.); 113-115 (3 figs.)

the works of art along the Austrian border, in Dalmatia, at Aquileia, Capodistria, and Parenzo.

**A VITA OF JACOPO DA EMPOLI.**—In *Arte e Storia*, XXXIV, 1915, pp. 207-212 (fig.), G. BATTELLI publishes from a Magliabechiano manuscript a short account of the life and works of Jacopo da Empoli written by his pupil Virgilio Zaballi. A catalogue of Empoli's known works is added.

**TWO NEW PICTURES BY PARIS BORDONE.**—In *Burl. Mag.* XXVIII, 1915, pp. 93-98 (2 figs.), C. PHILLIPS publishes two new examples of the work of Paris Bordone: a Holy Family with Donor in the possession of Sir George Warrender, London, and a Repose in Egypt belonging to the Berenson Collection, Settignano. The two are closely related and show the earliest stages of the artist.

**ASCOLI PICENO.**—The Romanesque Churches.—In *Rass. Bibl. d'Arte Ital.* XVIII, 1915, pp. 53-63 (fig.), E. CALZINI gives an account of the Romanesque churches of Ascoli Piceno. The stilted arches in two reveals above the doors and many other details of portal decoration reflect South Italian influence; the division of the façade into rectangular compartments is Tuscan; the diamond cornice is ultimately French, but here borrowed from the Abruzzi.

**BOLOGNA.**—Two Intarsias Designed by Cossa.—In the choir of S. Petronio, Bologna, are two saints, St. Petronius and St. Ambrose, done in intarsia by Agostino de' Marchi. The designs were, however, furnished by Francesco del Cossa, as is shown not only by the agreement with his style but also in the case of St. Petronius by a document in the cathedral archives. (*Boll. Arte*, IX, 1915, p. 263; 3 figs.)

**The Identity of Jacobino de' Papazzoni.**—In *Boll. Arte*, IX, 1915, pp. 179-180, F. FILIPPINI publishes a document of 1365 from the Bologna Archivio di Stato which mentions the painter Jacobino de' Papazzoni, thus vouching for that form of the name. The artist may be identical with Jacobino de' Bavosi and with the "Jacobus" who signed the Mezzaratta frescoes, but nothing prevents the distinctness of all three.

**BORDOGNA.**—A Discovery of Early Cinquecento Frescoes.—In a little chapel of S. Rocco near Bordogna (Bergamo) there has recently been found a series of Bergamesque frescoes painted in the early sixteenth century by various local painters. They are in good preservation because already covered in 1580. (*L. ANGELINI, Pagine d'Arte*, III, 1915, pp. 58-59; fig.)

**BRESCIA.**—New Moretto Documents.—In *Arch. Stor. Lomb.* XLII, 1915, pp. 176-180, G. BONELLI publishes two documents relating to Moretto which are of human biographical interest as showing the prosperous artist's practice of making generous loans of money to his friends.

**CERTALDO.**—Early Quattrocento Panels.—In *Rass. d'Arte*, XV, 1915, pp. 185-186 (4 figs.), M. MANSFIELD publishes a hitherto unnoticed series of small paintings from the altar step of the church of SS. Michele e Jacopo, Certaldo. The subjects are taken from the story of the local Beata Giulia. The paintings show the influence of Lorenzo Monaco and the Sienese and are done in a sort of miniature style; they should date at the very beginning of the fifteenth century.

**FLORENCE.**—Documents for the Fortezza da Basso.—In *Arte e Storia*, XXXIV, 1915, pp. 162-166, L. DAMI publishes three new documents concerning the building of the Fortezza da Basso. This was constructed after designs

by Antonio da Sangallo during the years 1533 to 1537 as a castle for Alessandro de Medici.

**MILAN.**—A Drawing Attributed to Lionbruno.—In *Rass. d'Arte*, XV, 1915, pp. 189-190 (pl.), G. FRIZZONI attributes to Lorenzo Lionbruno an ink-drawing tinted with aquarelle in the Dubini Collection, Milan. The Death of Eurydice is represented in a form which derives artistically from Mantegna and on the literary side from Poliziano.

A Painting by Giovanni Paolo de Agostini.—G. NICODEMI publishes in *Rass. d'Arte*, XV, 1915, pp. 180-182 (3 figs.), a hitherto ignored work of the obscure Quattrocento Paduan painter Giovanni Paolo de Agostini. The picture, a Pietà in S. Maria alla Porta, Milan, is of interest as an example of the softening of the style of Mantegna through the influence of that of Antonello.

A New Amadeo in the Museo Civico.—The Museo Civico of Milan has recently added to the collection of sculptures by Giovanni Antonio Amadeo a figure of an angel which dates from the time of the sculptor's activity at the Certosa of Pavia, 1475-1482. (C. ELLI, *Pagine d'Arte*, III, 1915, pp. 67-68; fig.)

**MOLTEDO.**—A Van Dyck Restored.—The General Direction for Fine Arts announces the successful restoration of a neglected Holy Family with St. Anne by Van Dyck in the Parrocchiale of Moltedo. The picture was presumably painted on the artist's second visit to Liguria, 1624-1625. (*Boll. Arte*, IX, 1915, p. 160; fig.)

**NAPLES.**—New Artistic Documents.—In *Arch. Stor. Prov. Nap.* I, 1915, pp. 352-367, G. D'ADDOSIO continues his publication begun in the preceding number of this periodical of documents on Neapolitan artists of the sixteenth and seventeenth centuries drawn from the records of the banks. This installment brings material concerning Imparato Giov. Thomase, Infante Camillo or Achille, Iodice Francesco, Lamberto de Simone, Landi Angelo, Landini Bernardino, Landano Nardo Angelo, Lazzari Jacopo, Lazzari Dionisio, Lichetti Pietro, Maisini or Maitiniti Raffaele, and Malsoma or Malasoma Andrea.

The Castello di Belvedere.—In *Arch. Stor. Prov. Nap.* I, 1915, pp. 101-179 (6 figs.), is published posthumously with complete documentary evidence an account of the Castello di Belvedere or Monteleone near Naples by G. DE BLASII. This castle was built by Frederick II, 1227-1229, damaged in the disturbances following his death, 1250, and rebuilt on a larger scale by Charles I of Anjou, 1275-1277.

**PERUGIA.**—New Documents.—Supplementary to the documents collected by Bombe, *Geschichte der Peruginer Malerei*, U. GNOLI in *Boll. Arte*, IX, 1915, pp. 119-128, 305-312, offers his gleanings of unpublished documents from the Perugian archives; he has confined himself to the artists of the fifteenth and early sixteenth centuries.

**ROME.**—Two Paintings at the British Embassy.—In *Rass. d'Arte*, XV, 1915, pp. 145-146 (pl.; 2 figs.), M. DE BENEDETTI publishes two pictures belonging to Sir Rennel Rodd, British Ambassador at Rome. One is a St. Jerome attributed to Palma Vecchio, the other a Madonna by Giampietrino. G. CAGNOLA publishes a Flemish copy of the latter in the Ehrlich Galleries, New York.

The Exile of Domenico Fontana.—In *Boll. Arte*, IX, 1915, pp. 165-168, J. A. F. ORBAAN publishes a number of documents from Roman archives which



concern the departure of Domenico Fontana from Rome and his subsequent mysterious and unwelcome stay in Naples.

**Art at Rome in the Seventeenth Century.**—In *Arte e Storia*, XXXIV, 1915, pp. 178-181, E. SCATASSA publishes documents of the early seventeenth century relating to artists and collections, which he has extracted from the Archivio Capitolino. *Ibid.* pp. 276-280, are given more documents from the same source which indicate the loss of art works in Rome during the early eighteenth century.

**SOCIANA.**—Discovery of Important Renaissance Sculptures.—In *Boll. Arte*, IX, 1915, pp. 149-154 (2 pls.; 4 figs.), O. H. GIGLIOLI brings out three finds of prime importance: two angels in high relief kneeling with candelabra, which rank among the latest and ripest works of Mino da Fiesole, and a Madonna relief by Antonio Rossellino, dating from the very beginning of the artist's career, and perhaps his earliest work. All three have escaped notice though in the heart of Tuscany in the church of S. Clemente at Sociana. The ultimate provenance and the history of the works is a blank before their addition to the 1818 inventory of the church in 1822.

**URBINO.**—Attribution of Two Pictures.—In *Rass. d'Arte*, XV, 1915, pp. 59-62 (4 figs.), G. BERNARDINI attributes a Madonna in the cathedral sacristy to the Fratelli Salimbene da Sanseverino and a standing figure of S. Jacopo della Marca in the Urbino Pinacoteca, generally assigned to Crivelli, to his pupil Stefano Folchetti. G. CAGNOLA would reverse the latter attribution.

**VENICE.**—The Damage to S. Maria degli Scalzi.—The injury incurred by the church of S. Maria degli Scalzi from a bomb dropped on an Austrian air raid, and the great fresco of Tiepolo lost by that event are treated in *Burl. Mag.* XXVIII, 1915, pp. 121-122 (fig.), by B. NICHOLS; and again in *Pagine d'Arte*, III, 1915, pp. 137-138 (fig.).

**VICENZA.**—The Removal of the Studio of Valerio Belli.—In *L'Arte*, XVIII, 1915, pp. 253-257, G. ZORZI publishes the documents concerning the sale of the studio of Valerio Belli for 500 scudi and the consequent removal of this veritable museum from Vicenza to Trent and its loss to Italy.

#### FRANCE

**LYONS.**—The Missal of Sainte-Chapelle of Paris.—In *Rev. Arch.*, fifth series, II, 1915, pp. 37-65 (25 figs.), J. BIROT and J.-B. MARTIN publish an account of the Manuscript and the miniatures of the Missal of Sainte-Chapelle, Paris, now preserved in the treasury of the Primacy of St. John at Lyons. The work is Parisian of the early fourteenth century.

**ROUVROY.**—A Merovingian Tomb.—In *R. Arch.*, fifth series, II, 1915, pp. 242-244 (3 figs.), is a letter from Captain Dumouthay containing a description, with drawings, of the contents of a Merovingian tomb uncovered by French troops in digging a trench near Rouvroy (Somme). The description and drawings are by Sergeant Mazet. The tomb contained some pottery, a sword, a knife, and a buckle.

#### HOLLAND

**AMSTERDAM.**—An Acquisition of the Rijksmuseum.—In *Burl. Mag.* XXVII, 1915, pp. 248-251, L. CUST publishes an extract from the catalogue by Van der Doort showing that there were two still lifes in the collection of

King Charles I by Johannes Torrentius. These have disappeared, but a third, not catalogued by Van der Doort but bearing on the back the mark of this collection and mentioned in a contemporary letter as brought by the artist to England, has recently come to light and has been acquired for the Rijksmuseum, Amsterdam. The writer appends a note incorporating the researches of D. W. van Dam which show that the Rembrandt portrait hitherto called Johan van Echten is actually a portrait of a brother, Evert van Echten.

**THE HAGUE.**—The New "Huis Nieuwburg" of the Gemeentemuseum.—In *Mh. f. Kunstw.* VIII, 1915, pp. 251-253, R. BANGEL cites documents to show that Maria van der Laeck is not the sister of Reinier van der Laeck but his daughter, born 1638. Therefore the landscape of 1644 representing "Huis Nieuwburg" at Rijswijk, which has recently been acquired by the Gemeentemuseum at The Hague, cannot be attributed to her, only to her father.

#### GERMANY

**BERLIN.**—Giotto's Death of the Virgin.—In *Rass. d'Arte*, XV, 1915, pp. 187-188 (fig.), F. G. DI GIUSEPPE questions the identification of the Death of the Virgin lately acquired by the Berlin museum with the picture mentioned by Ghiberti, Vasari, etc. He publishes a letter of 1832 in which another Death of the Virgin, then in Pisa, is described as that from Ognisanti and maintains that the drawing and dimensions of this picture which accompany the letter better accord with the descriptions of Giotto's work than does the Berlin example.

**SCHLEDEHAUSEN.**—An Attribution to Meister Francke.—In *Z. Bild. K.* XXVI, 1915, pp. 231-234 (fig.), V. C. HABICHT agrees with Goldschmidt that the painter Meister Francke of Hamburg was also active as a sculptor and attributes to him the altar of the church at Schleddehausen, dating it 1425-1430.

**WOLFENBÜTTEL.**—A Drawing by Jan van Eyck.—In *Jb. Preuss. Kunsts.* LXIII, 1915, pp. 215-222 (pl.; 5 figs.) H. ZIMMERMANN publishes as a drawing by Jan van Eyck a silver-point Annunciation in the library at Wolfenbüttel and dates the attribution shortly after 1426. The Annunciation takes place in a Gothic church of typical Van Eyck style, yet does not so closely resemble any picture as to be an imitation. This drawing has the distinction of once having belonged to the famous and historically important amateur, Phillip Hainhofer of Augsburg.

#### AUSTRIA-HUNGARY

**TYROLESE PICTURES.**—In *Jb. Kunst. Samm.* XXXII, 1915, pp. 254-278 (pl.; 10 figs.), H. KENCZLER publishes six panels of the Life of Mary which have lately been presented to the Rákóczi Museum at Kaschau, Hungary, and identifies as belonging to the series the puzzling panel, No. 1395, of the Vienna Hofmuseum. The six Kaschau panels were originally three in number and painted on both sides as is the Vienna panel. Kenczler calls the whole set a product of Bohemian art belonging to the altarpiece probably of the church of St. Elizabeth, Kaschau, from which church those panels still in Kaschau are said to have come, and dates them in the second quarter of the fifteenth century; but H. BRAUNE (*Mh. f. Kunstw.* VIII, 1915, pp. 249-250; 6 figs.) points out that Hans Semper had long since determined the origin of the

Vienna panel, hence that of the others in Kaschau, as at Brixen in Tyrol from the School of Jacob Sunter. Braune also calls attention to eight panels in the museum of Moulins which are the product not of the fictitious Netherland Master Awrechs to whom they have been assigned but of Michael Pacher's studio about 1460 or 1470. Four represent the story of St. Stephen, the other four the Passion. Of Michael Pacher himself there are here published



FIGURES 6-9.—ST. CATHARINE, ST. BARBARA, ST. PETER, AND ST. PAUL;  
BY MICHAEL PACHER

four half figures of saints at Wilten, near Innsbruck (Figs. 6-9). The two pictures, Nos. 54 and 55 of the Nationalmuseum at Munich are also attributed to the Tyrol rather than to the Munich school as catalogued. Finally four panels by Simon von Taister representing St. Elizabeth's legend and two saints are noted; they are in the possession of Frau von Miller in the chapel of the castle at Meeresburg.

## GREAT BRITAIN

**LONDON.—An Imitation of Mantegna by Cranach.**—In *Rass. d'Arte*, XV, 1915, p. 73 (pl.; fig.), B. BERENSON publishes a Madonna in the collection of Murray Marks, London, as a translation of an unknown original by Mantegna into German by the artist Lucas Cranach. To sustain the attribution to Cranach G. CAGNOLA offers for comparison a fragment, the lower part of a picture which was once a typical Venus and Cupid, but which now shows only the lower half of the Venus and the playing Cupid. This picture, in a private collection at Milan, bears Cranach's name.

**Leonardo's Madonna of the Rocks.**—In *Rass. d'Arte*, XV, 1915, pp. 97-101 (pl.), L. BELTRAMI gives a résumé of new Leonardo documents which show that the Madonna of the Rocks was only paid for in full by the Confraternity of the Conception on Oct. 23, 1508. From this evidence their version of the picture was not given up and carried off to France by Louis XII, as heretofore alleged, but is the same as that which passed from the Cappella della Concezione to the National Gallery. Whatever the Louvre painting may be, the London example is thus the actual work of Leonardo. In *Arte e Storia*, XXXIV, 1915, pp. 231-233, D. SANT' AMBROGIO expresses the belief that the true original is the smaller treatment of the subject at Affori, for this would allow for the saints at the sides mentioned in the contract, and that the London picture was a studio product for which Leonardo would have had little time after withdrawing his own picture, 1498-1499, but which would be, as the documents imply, turned over to De Predis.

**Two Drawings by Bramantino in the British Museum.**—In *Boll. Arte*, IX, 1915, pp. 13-19 (5 figs.), G. BERNARDINI attributes two aquarelle drawings in the British Museum (1895, 9, 15, 760—S. C. R., 313 and 1895, 9, 15, 761—S. C. R., 314) to Bramantino; the subjects are Christ shown to the Populace and St. Mark Enthroned.

**An Attribution to Cosimo Tura.**—In *Burl. Mag.* XXVII, 1915, pp. 202-205 (pl.), T. BORENIUS publishes a panel of the Crucifixion acquired by Herbert Cook from the sale of the F. Tessier Collection and attributes it to Cosimo Tura. In a subjoined note the same writer identifies the well-known Bellini Christ in the Louvre as a certain Salvatore by Giovanni Bellini mentioned by Ridolfi as a gift of the artist to the Padri di Santo Stefano.

## UNITED STATES

**MISCELLANY.**—In *Rass. d'Arte*, XV, 1915, pp. 121-125 (pl.; 8 figs.), F. M. PERKINS reproduces the Prelate by Sebastiano del Piombo of the Angus Collection, Montreal, dating the picture 1510-1515. Another Sebastiano, a Judith in a Berlin private collection, is also published and dated shortly after 1519. Of Andrea del Sarto a portrait in the Wildenstein Collection in New York is published; of Jacopo Bassano The Rich Gormand in the Platt Collection at Englewood; of Palma Vecchio a female portrait in the Murray Collection at London; of Bonifazio Veronese another female figure from a private collection in Florence; of Moretto a Magdalene formerly in the Blakeslee Collection and now privately owned in New York; and finally of Dosso Dossi a Landscape with Figures and a Bust of a Warrior in the Ehrich Galleries at New York.

**BOSTON.—Acquisitions of the Museum of Fine Arts.**—The Brayton Ives sale made the year 1915 one of great growth in the print department of the Boston museum. Two additions of first importance were the complete series of Schongauer's Passion and a full set of the fifty so-called "Tarocchi" prints. Other acquisitions were two Planets from the rare Florentine series of the Finiguerra school, four examples of Giulio Campagnola, two Mantegnesque engravings, a Pietà by the North Italian "PP," Leda and Her Children by the Bolognese "IB" with the bird, Dante in Fear by an anonymous late Quattrocento Dante illustrator, Apollo and Diana by Jacopo de Barbari, The Entry into Jerusalem by the German "Lcz," The Travellers of Jacob Ruysdael, a Saftleven landscape, a Goatherd by Cornelis Mattue, various Van Dyck portraits, St. Michael and the Dragon from the Apocalypse series of Jean Duvet, a Flagellation by Jean Gourmont, two of the famous Parisian views by Jacques Callot, some portraits by Thomas de Leu and examples of more modern French and English artists. (*B. Mus. F. A. XIII*, 1915, pp. 63-70; 11 figs.) Mrs. W. Scott Fitz has presented three Italian primitives to the museum, a Madonna by Barnaba da Modena, a head of the Magdalene by Segna di Bonaventura, and a Saint of the School of Simone Martini. (*B. Mus. F. A. XIII*, 1915, p. 83; fig.) A Battle Scene by Paolo Uccello is a case-some panel formerly in the Butler Collection, London, acquired by the museum. (*B. Mus. F. A. XIII*, 1915, p. 62; fig.) To the collection of western sculptures has been added a French Gothic niche of the early fifteenth century. (*B. Mus. F. A. XIII*, p. 70; fig.)

**CAMBRIDGE.—An Annunciation by Andrea Vanni in the Fogg Museum.**—In *Art in America*, III, 1915, pp. 226-231 (3 figs.), G. H. EDGELL publishes an Annunciation in two panels by Andrea Vanni formerly in the Saracini palace at Siena and now in the Fogg Museum. The painting has suffered from time, but not from restoration and is of interest as showing the preponderant influence of Simone Martini.

**CHICAGO.—Manuscript Accessions of the Art Institute.**—The *Bulletin of the Art Institute of Chicago* (IX, 1915, pp. 97-100; 5 figs.) discusses some of the manuscript accessions from the Voynich Collection: an unpublished and anonymous *Description of the World* written and illuminated in Paris, a North Italian Book of Hours, and a Florentine manuscript of Horace's *Art of Poetry*—all three of the fourteenth century, and a copy of the Vulgate illuminated in the Canterbury style of the early thirteenth century.

**MINNEAPOLIS.—The Acquisitions of the New Museum.**—The *Bulletin of the Minneapolis Institute of Arts* publishes the following accessions: a miniature by Jean Bourdichon (IV, 1915, pp. 26-28; fig.), a fifteenth century Venetian well-head (*ibid.* pp. 74-75; fig.), The Concert by Van Musscher from the Blakeslee Collection (*ibid.* pp. 78-79; fig.), and a Pomona by Giovanni della Robbia (*ibid.* pp. 110-112; fig.).

**NEW YORK.—Acquisitions of the Metropolitan Museum.**—Important new additions to the Metropolitan Museum are a panel by Butinone, four panels by Gozzoli, and a number of tapestries. The picture by Butinone, correctly Bernardino Jacopi of Treviglio, is apparently the right-hand shutter of a dismembered triptych; it represents St. John and St. Lawrence and is a good example of Lombard art before the Leonardesque period. (*B. Metr. Mus. X*, 1915, pp. 152-154; fig.) The four panels by Benozzo Gozzoli repre-

sent the stories of St. Peter and Simon Magus, the Conversion of St. Paul, St. Zenobius and the Widow's Child, Totila before St. Benedict. They were painted about 1461 for the chapel of the Alessandri in S. Pier Maggiore, Florence. (*B. Metr. Mus. X*, 1915, pp. 224-228; 4 figs.) The first tapestry to be mentioned is a large Gothic hunting tapestry which would seem to be French or Franco-Flemish of about 1500 and it suggests the somewhat earlier Hardwicke Hall examples. (*B. Metr. Mus. X*, 1915, p. 214; fig.) More important is the Gillespie bequest of eight tapestries: one German representing the Epiphany and dating about 1500, two Brussels tapestries from about 1510 representing "Courts of Love," a pair of Renaissance hangings of the second half of the century and showing St. Paul before Agrippa and St. Paul Preaching at the River and bearing the device of the unknown Brussels weaver who did the set of the History of Jacob at Vienna, a decorative piece of Flemish work of approximately the same date and of considerable interest because made for the side or back of one of the upholstered benches popular at the time, a large Flemish tapestry of the early seventeenth century representing the month June as a fishing scene and in the clouds above Diana with the wet and the dry moon and the crab on her chariot wheel, and finally a Brussels tapestry of the late seventeenth century representing Pomona. This last is attributed to the loom of Pierre van den Hecke and the cartoon is in the style of the painter Van Schnoor. (*B. Metr. Mus. X*, 1915, pp. 247-252; 5 figs.)

**PHILADELPHIA.**—An Attribution to Jan Lys.—In *Art in America*, IV, 1915, pp. 53-58 (2 figs.), R. OLDENBOURG attributes the picture, formerly called a Velasquez, now a Strozzi, of the Satyr and the Peasant in the Widener Collection, to Jan Lys and to his earlier period.

**WORCESTER.**—Acquisitions of the Museum.—New additions to the Worcester museum are two fifteenth century Italian columns and a small triptych in alabaster representing the Madonna between Saints. The figures are distinctive enough to allow an attribution to the school of the Gaggini, South Italy, fifteenth century. (*Bulletin of the Worcester Art Museum*, VI, 1915, pp. 8-12; 3 figs.)

**The Ghirlandaio Portrait in the Worcester Museum.**—In *Rass. d'Arte*, XV, 1915, p. 19 (fig.), F. M. PERKINS corroborates the attribution to Ghirlandaio of the portrait recently acquired as a Ghirlandaio by the Worcester museum.



## ABBREVIATIONS

*Abh.*: Abhandlungen. *Allg. Ztg.*: Münchener Allgemeine Zeitung. *Alt. Or.*: Der alte Orient. *Am. Anthr.*: American Anthropologist. *Am. Archit.*: American Architect. *A.J.A.*: American Journal of Archaeology. *A.J. Num.*: American Journal of Numismatics. *A. J. Sem. Lang.*: American Journal of Semitic Languages and Literature. *Ami d. Mon.*: Ami des Monuments. *Ant. Denk.*: Antike Denkmäler. *Ann. Arch. Anth.*: Annals of Archaeology and Anthropology. *Ann. Scuol. It. Ath.*: Annuario della r. Scuola Archeologica di Atene e delle Missioni Italiane in Oriente. *Arch. Ael.*: Archaeologia Aeliana. *Arch. Anz.*: Archäologischer Anzeiger. *Arch. Rec.*: Architectural Record. *Arch. Rel.*: Archiv für Religionswissenschaft. *Arch. Miss.*: Archives de Missions Scientifiques et Littéraires. *Arch. Stor. Art.*: Archivio Storico dell' Arte. *Athen.*: Athenaeum (of London). *Ath. Mitt.*: Mitteilungen d. k. d. Archaeol. Instituts, Athen. Abt.

*Beitr. Assy.*: Beiträge zur Assyriologie. *Ber. Kunsts.*: Amtliche Berichte aus den Königlichen Kunstsammlungen. *Berl. Akad.*: Preussische Akademie der Wissenschaften zu Berlin. *Berl. Phil. W.*: Berliner Philologische Wochenschrift. *Bibl. Stud.*: Biblische Studien. *Bibl. World*: The Biblical World. *B. Ac. Hist.*: Boletín de la real Academia de la Historia. *Boll. Arte.*: Bollettino d' Arte. *Boll. Num.*: Bollettino Italiano di Numismatica. *Bonn. Jb.*: Bonner Jahrbücher: Jahrbücher des Vereins von Altertumsfreunden im Rheinlande. *B.S.A.*: Annual of the British School at Athens. *B.S.R.*: Papers of the British School at Rome. *B. Arch. M.*: Bulletin Archéol. du Ministère. *B. Arch. C. T.*: Bulletin Archéologique du Comité des Travaux hist. et scient. *B.C.H.*: Bulletin de Correspondance Hellénique. *B. Inst. Ég.*: Bulletin de l'Institut Égyptien (Cairo). *B. Metr. Mus.*: Bulletin of the Metropolitan Museum of Art, New York. *B. Mus. Brux.*: Bulletin des Musées Royaux des arts décoratifs et industriels à Bruxelles. *B. Mus. F. A.*: Museum of Fine Arts Bulletin, Boston. *B. Num.*: Bulletin de Numismatique. *B. Soc. Ant. Fr.*: Bulletin de la Société des Antiquaires de France. *B. Soc. Anth.*: Bulletin de la Société d'Anthropologie de Paris. *B. Mon.*: Bulletin Monumental. *B. Com. Rom.*: Bollettino d. Commissione Archeologica Comunale di Roma. *B. Arch. Crist.*: Bollettino di Archeologia Cristiana. *B. Pal. It.*: Bollettino di Paleologia Italiana. *Burl. Gaz.*: Burlington Gazette. *Burl. Mag.*: Burlington Magazine. *Byz. Z.*: Byzantinische Zeitschrift.

*Chron. Arts*: Chronique des Arts. *Cl. Phil.*: Classical Philology. *Cl. R.*: Classical Review. *C. R. Acad. Insc.*: Comptes Rendus de l'Académie des Inscriptions et Belles-Lettres. *C.I.A.*: Corpus Inscriptionum Atticarum. *C.I.G.*: Corpus Inscriptionum Graecarum. *C.I.L.*: Corpus Inscriptionum Latinarum. *C.I.S.*: Corpus Inscriptionum Semiticarum. *'Apx. 'Eφ.*: 'Αρχαιολογική 'Εφημερίς. *Eph. Ep.*: Ephemeris Epigraphica. *Eph. Sem. Ep.*: Ephemeris für Semitische Epigraphik. *Exp. Times*: The Expository Times.

*Fornvänner*: Fornvänner: meddelanden från K. Vitterhets Historie och Antikvitets Akademien.

*Gaz. B.-A.*: Gazette des Beaux-Arts. *G.D.I.*: Sammlung der griechischen Dialekt-Inschriften.

*I.G.*: Inscriptiones Graecae (for contents and numbering of volumes, cf. *A.J.A.* IX, 1905, pp. 96-97). *I.G.A.*: Inscriptiones Graecae Antiquissimae, ed. Roehl. *I. G. Arg.*: Inscriptiones Graecae Argolidis. *I. G. Ins.*: Inscriptiones Graecarum Insularum. *I. G. Sept.*: Inscriptiones Graecae Septentrionalis. *I. G. Sic. It.*: Inscriptiones Graecae Siciliae et Italiae.

*Jb. Arch. I.*: Jahrbuch d. k. d. Archäol. Instituts. *Jb. Kl. Alt.*: Neue Jahrbücher für das klassische Altertum, Geschichte und deutsche Litteratur und für Pädagogik. *Jb. Kunst. Samm.*: Jahrbuch der Kunsthistorischen Sammlungen des allerhöchsten Kaiserhauses. *Jb. Phil. Päd.*: Neue Jahrbücher für Philologie und Pädagogik (Fleckeisen's Jahrbücher). *Jb. Preuss. Kunsts.*: Jahrbuch d. k. Preuss. Kunstsammlungen. *Jh. Oest. Arch. I.*: Jahreshefte des österreichischen Archäologischen Instituts. *J. Asiat.*: Journal Asiatique. *J.A.O.S.*: Journal of American Oriental Society. *J. B. Archaeol.*: Journal of the British Archaeological Association. *J. B. Archit.*: Journal of the Royal Institute of British Architects. *J. Bibl. Lit.*: Journal of Biblical Literature. *J.H.S.*: Journal of Hellenic Studies. *J. Int. Arch. Num.*:

Διόνυς Ἐφημερίς τῆς νομισματικῆς ἀρχαιολογίας, Journal international d'archéologie numismatique (Athens).

Kb. Gesamtver.: Korrespondenzblatt des Gesamtvereins der deutschen Geschichts- und Altertumsvereine. Klio: Beiträge zur alten Geschichte. Kunschr.: Kunstchronik.

Mb. Num. Ges. Wien: Monatsblatt der Numismatischen Gesellschaft in Wien. Mh. f. Kunstw.: Monatshefte für Kunstwissenschaft. Mél. Arch. Hist. Mélanges d'Archéologie et d'Histoire (of French School in Rome). Mél. Fac. Or.: Mélanges de la Faculté Orientale, Beirut. M. Acc. Modena: Memorie della Regia Accademia di scienze, lettere ed arti in Modena. M. Inst. Gen.: Mémoires de l'Institut Genevois. M. Soc. Ant. Fr.: Mémoires de la Société des Antiquaires de France. Mitt. Anth. Ges.: Mitteilungen der anthropologischen Gesellschaft in Wien. Mitt. C.-Comm.: Mitteilungen der königlich-kaiserlichen Central-Commission für Erforschung und Erhaltung der Kunst- und historischen Denkmale. Mitt. Or. Ges.: Mitteilungen der deutschen Orient-Gesellschaft. Mitt. Pal. V.: Mitteilungen und Nachrichten des deutschen Palästina Vereins. Mitt. Nassau: Mitteilungen des Vereins für nassauische Altertumskunde und Geschichtsforschung. Mitt. Vorderas. Ges.: Mitteilungen der vorderasiatischen Gesellschaft. Mon. Ant.: Monumenti Antichi (of Accad. d. Lincei). Mon. Piot: Monuments et Mémoires pub. par l'Acad. des Inscriptions, etc. (Fondation Piot). Mün. Akad.: Königlich Bayerische Akademie der Wissenschaften, München. Mün. Jb. Bild. K.: Münchner Jahrbuch der bildenden Kunst.

N. D. All.: Nachrichten über deutsche Altertumskunde. Nomisma: Nomisma: Untersuchungen auf dem Gebiete der antiken Münzkunde. Not. Scav.: Notizie degli Scavi di Antichità. Num. Chron.: Numismatic Chronicle. Num. Z.: Numismatische Zeitschrift. N. Arch. Ven.: Nuovo Archivio Veneto. N. Bull. Arch. Crist.: Nuovo Bullettino di Archeologia cristiana.

Or. Lit.: Orientalistische Literaturzeitung. Or. Lux: Ex Oriente Lux.

Pal. Ex. Fund.: Quarterly Statement of the Palestine Exploration Fund. Πρακτικά: Πρακτικά τῆς ἐν Ἀθήναις ἀρχαιολογικῆς ἐταιρείας. Proc. Soc. Ant.: Proceedings of the Society of the Antiquaries.

Rass. d'Arte: Rassegna d'Arte. Rec. Past: Records of the Past. R. Tr. Eg. Assyr.: Recueil de travaux relatifs à la philologie et à l'archéologie égyptiennes et assyriennes. Reliq.: Reliquary and Illustrated Archaeologist. Rend. Acc. Lincei: Rendiconti d. r. Accademia dei Lincei. Rep. f. K.: Repertorium für Kunstwissenschaft. R. Assoc. Barc.: Revista de la Asociación artístico-arqueológica Barcelonesa. R. Arch. Bibl. Mus.: Revista di Archivos Bibliotecas, y Museos. R. Arch.: Revue Archéologique. R. Art Anc. Mod.: Revue de l'Art ancien et moderne. R. Art Chré.: Revue de l'Art Chrétien. R. Belge Num.: Revue Belge de Numismatique. R. Bibl.: Revue Biblique Internationale. R. Ep.: Revue Epigraphique. R. Et Anc.: Revue des Études Anciennes. R. Et. Gr.: Revue des Études Grecques. R. Et. J.: Revue des Études Juives. R. Hist. Rel.: Revue de l'Histoire des Religions. R. Num.: Revue Numismatique. R. Or. Lat.: Revue de l'Orient Latin. R. Sém.: Revue Sémitique. R. Suisse Num.: Revue Suisse de Numismatique. Rh. Mus.: Rheinisches Museum für Philologie, Neue Folge. R. Abruzz.: Rivista Abruzzese di Scienze, Lettere ed Arte. R. Ital. Num.: Rivista Italiana Numismatica. R. Stor. Ant.: Rivista di Storia Antica. R. Stor. Calabr.: Rivista Storica Calabrese. R. Stor. Ital.: Rivista Storica Italiana. Röm.-Germ. Forsch.: Bericht über die Fortschritte der Römisch-Germanischen Forschung. Röm.-Germ. Kb.: Römisch-Germanisches Korrespondenzblatt. Röm. Mü.: Mitteilungen d. k. d. Archäol. Instituts, Röm. Abt. Röm. Quart.: Römische Quartalschrift für christliche Altertumskunde und für Kirchengeschichte.

Sächs. Ges.: Sächsische Gesellschaft (Leipzig). Sitzb.: Sitzungsberichte. S. Bibl. Arch.: Society of Biblical Archaeology, Proceedings.

Voss. Ztg.: Vossische Zeitung.

W. kl. Phil.: Wochenschrift für klassische Philologie.

Z. D. Pal. V.: Zeitschrift des Deutschen Palästina Vereins. Z. Aeg. Sp. All.: Zeitschrift für Aegyptische Sprache und Altertumskunde. Z. Alttest. Wiss.: Zeitschrift für alttestamentliche Wissenschaft. Z. Assyr.: Zeitschrift für Assyriologie. Z. Bild. K.: Zeitschrift für Bildende Kunst. Z. Ethn.: Zeitschrift für Ethnologie. Z. Morgenl.: Wiener Zeitschrift für die Kunde des Morgenlands. Z. Morgenl. Ges.: Zeitschrift der deutschen Morgenländischen Gesellschaft. Z. Mün. All.: Zeitschrift des Münchener Altertumsvereins. Z. Num.: Zeitschrift für Numismatik.